

FIG. 1

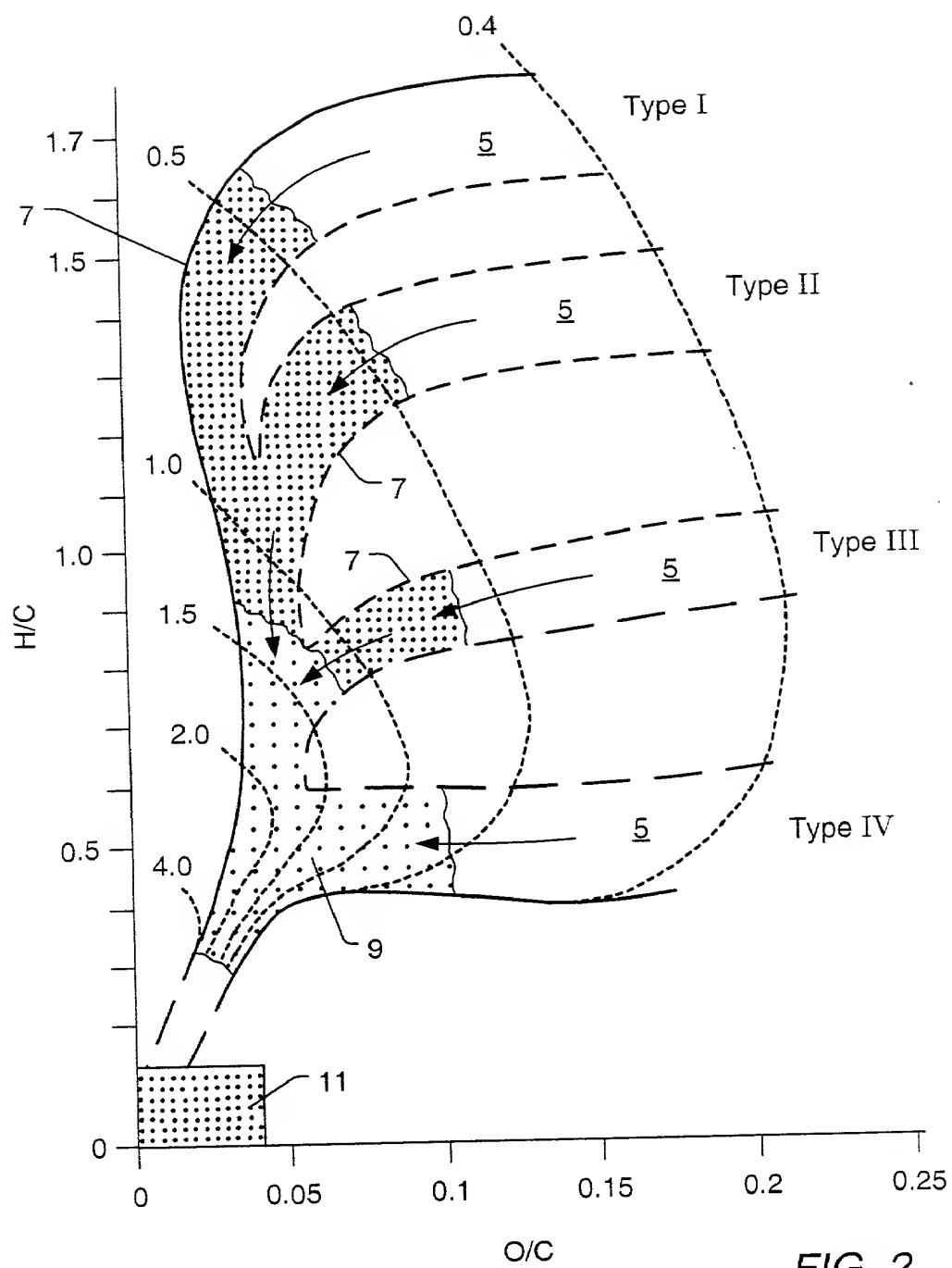


FIG. 2

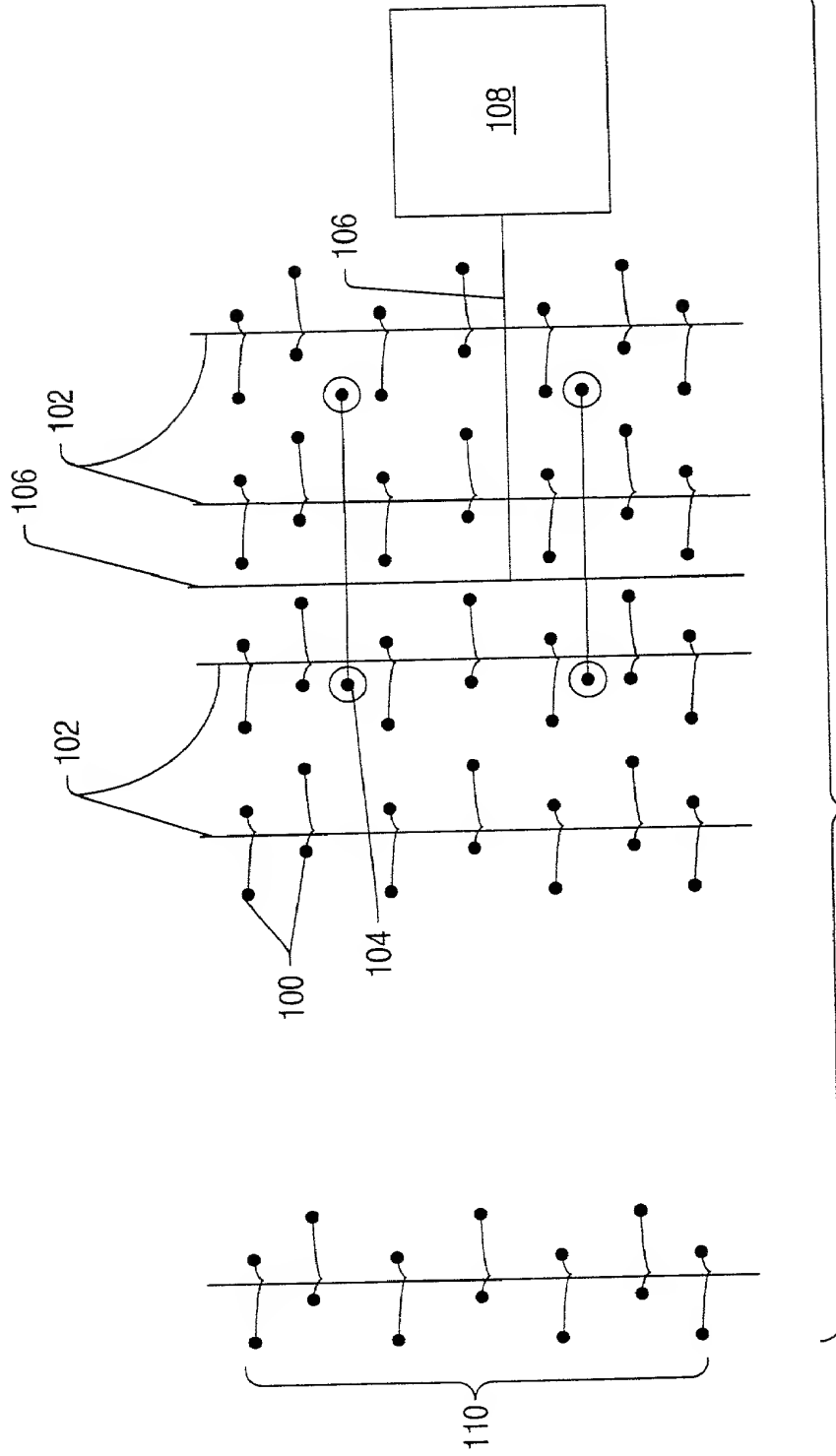


FIG. 3

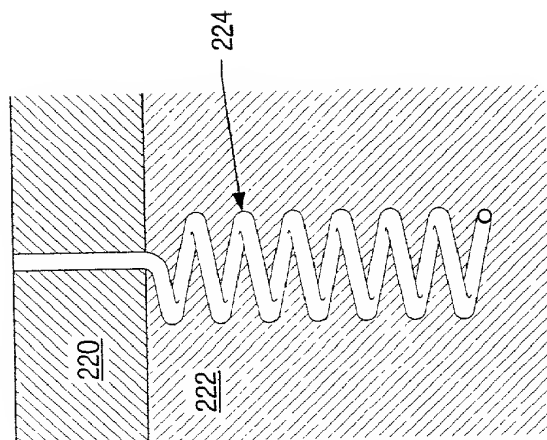


FIG. 3a

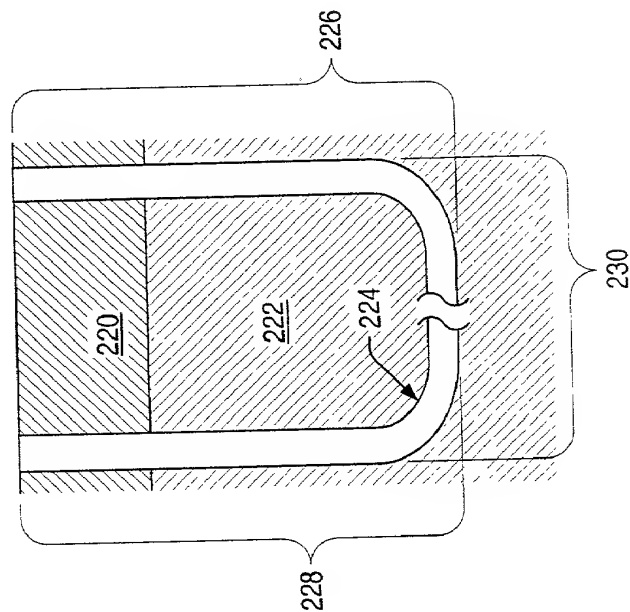


FIG. 3b

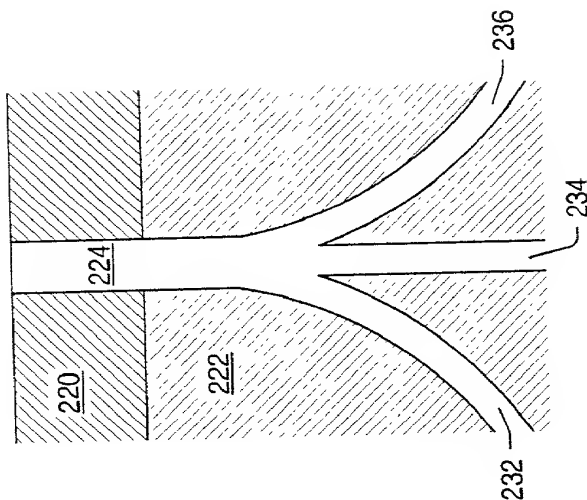


FIG. 3c

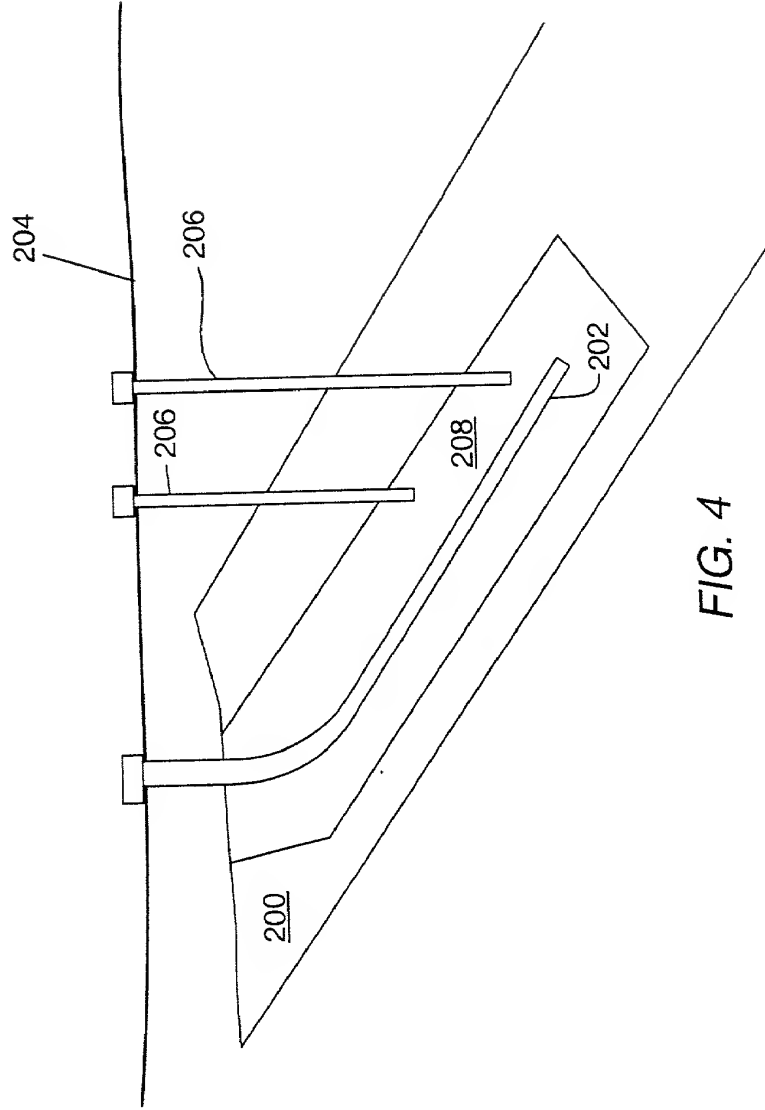
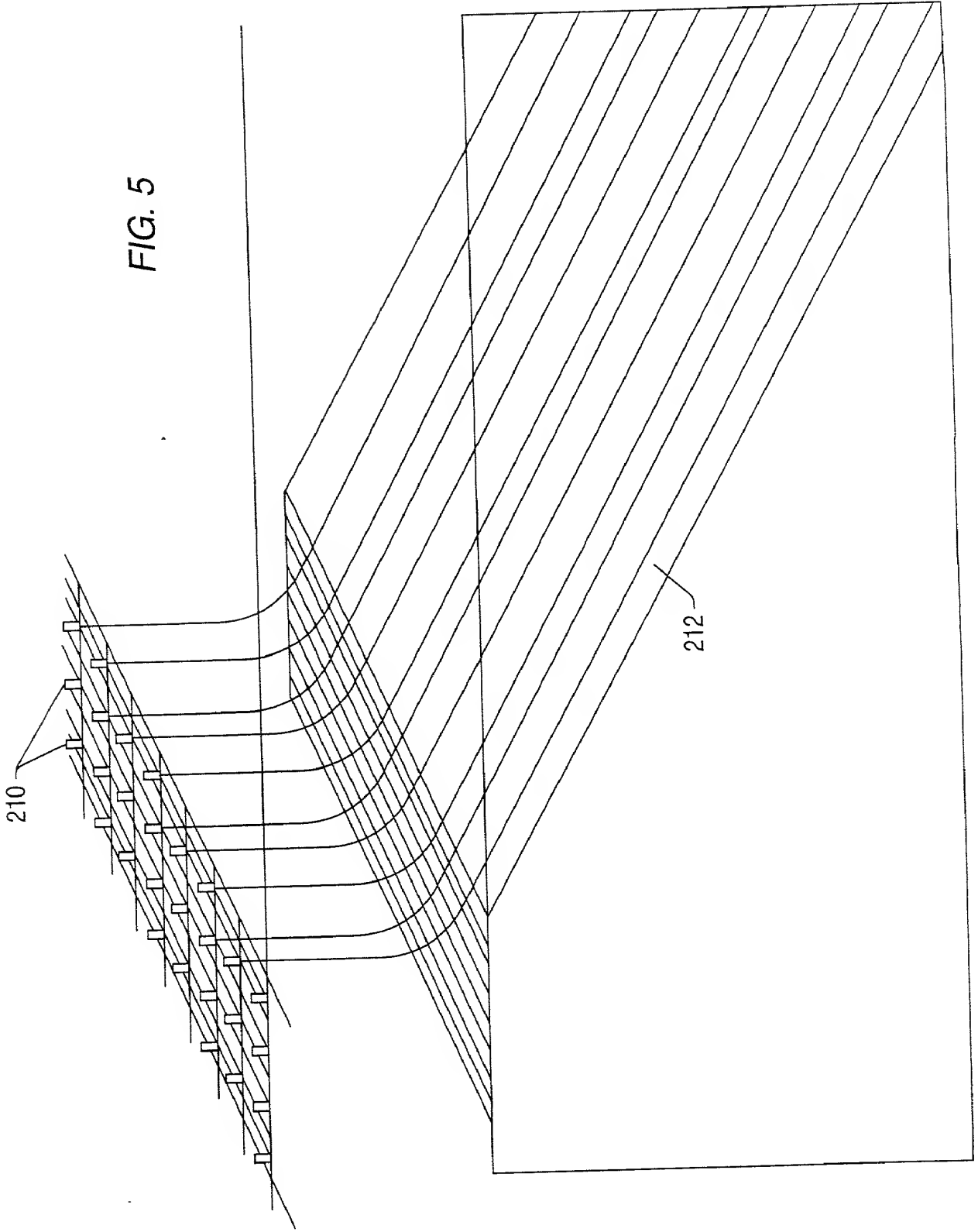


FIG. 4



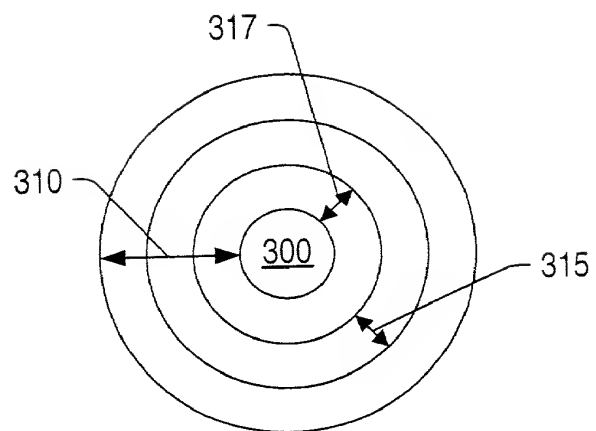


FIG. 6

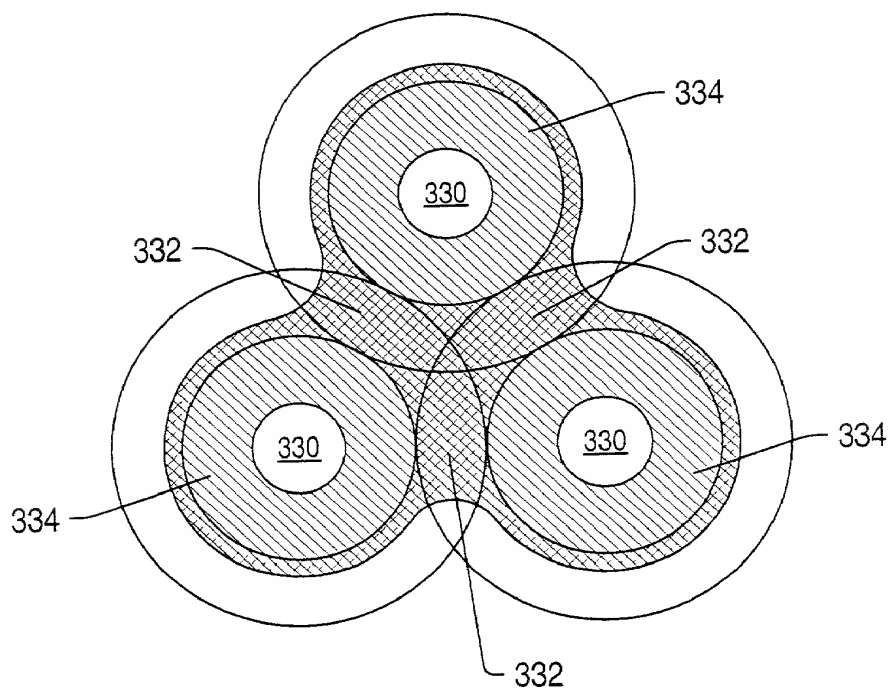


FIG. 7

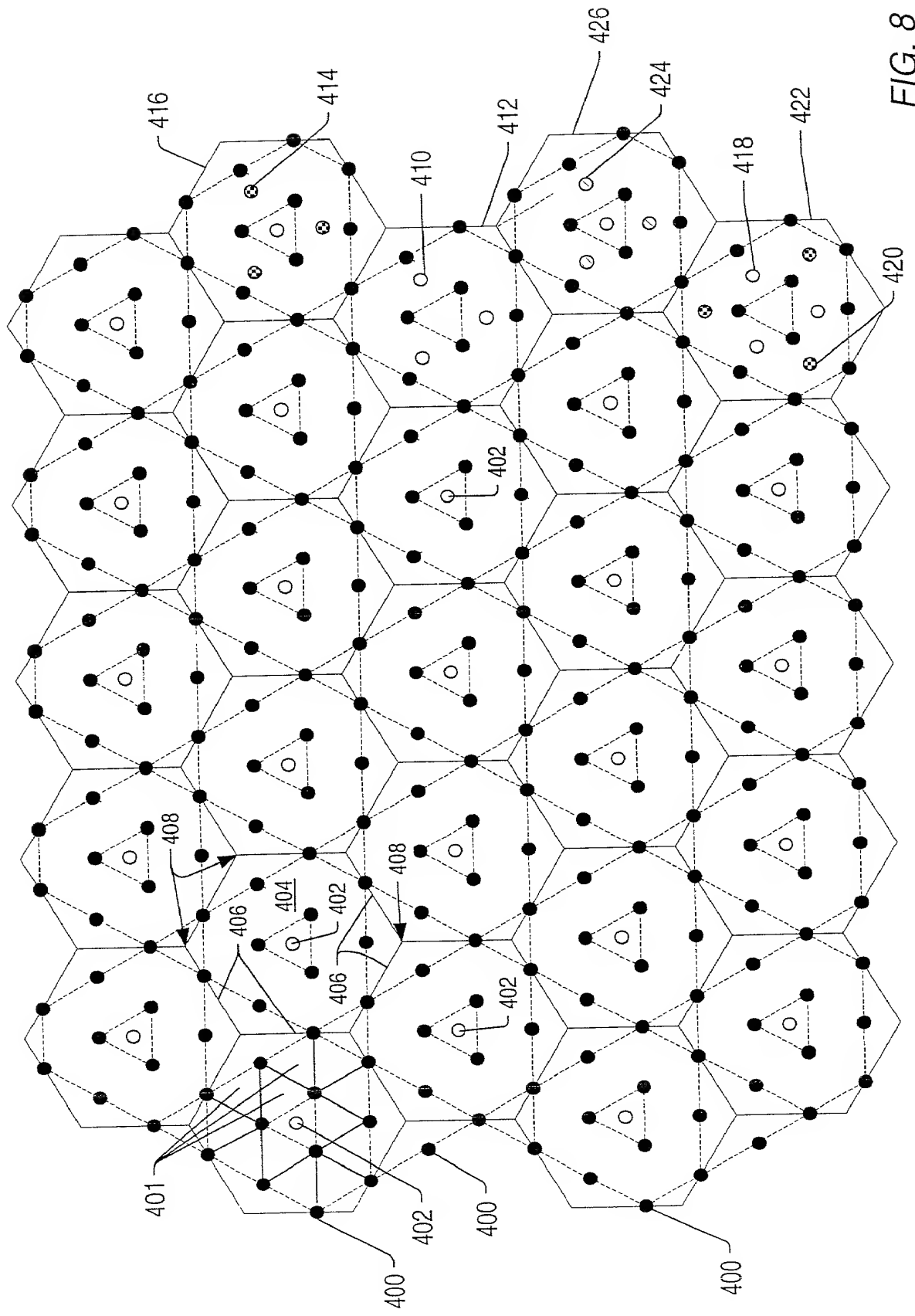


FIG. 8

FIG. 9 is a schematic diagram of a hexagonal lattice structure 400. The lattice is composed of a central hexagonal unit 402 and six surrounding hexagonal units 404. The central unit 402 is connected to the surrounding units 404 by lines 400a and 400b. The lattice is further defined by lines 400a and 400b.

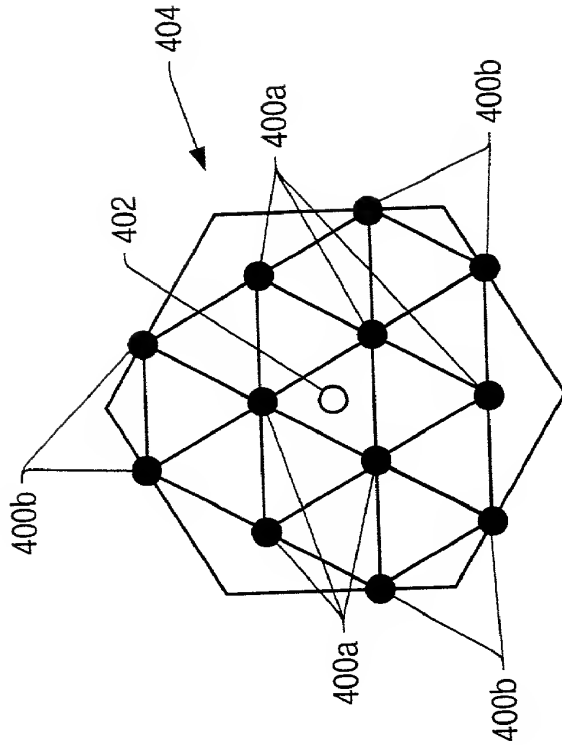


FIG. 9

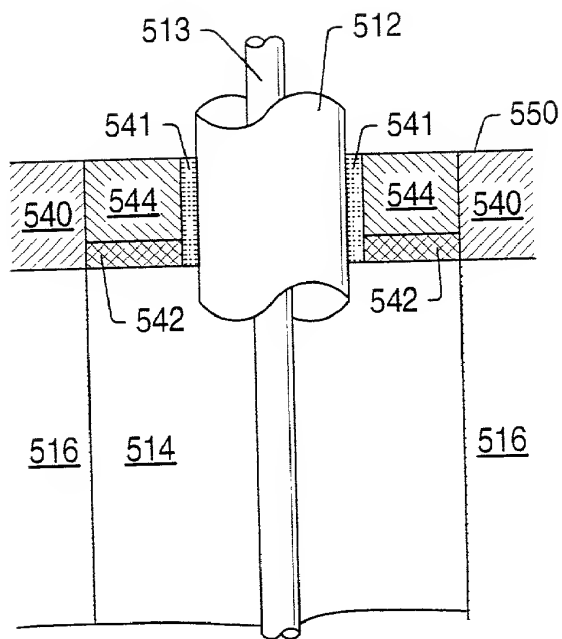


FIG. 11

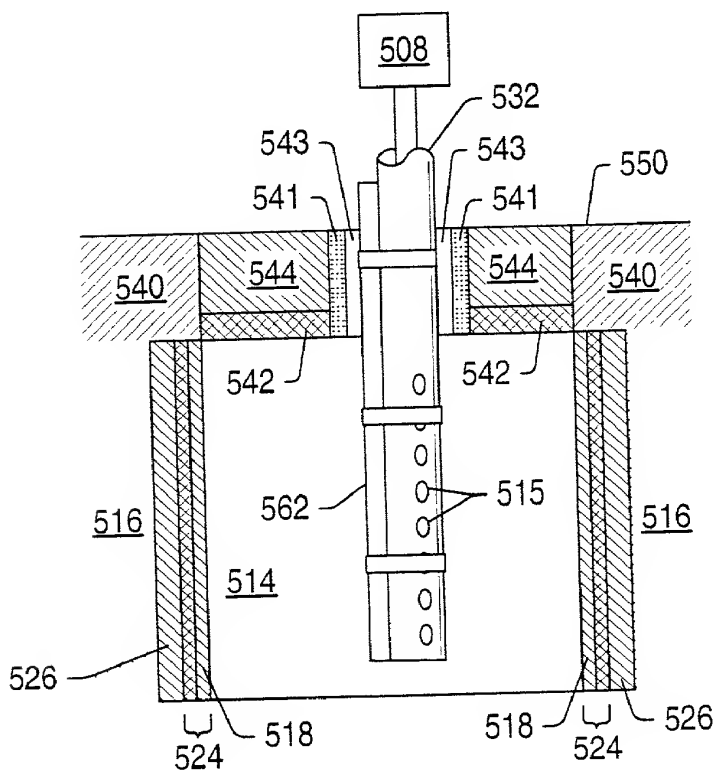


FIG. 12

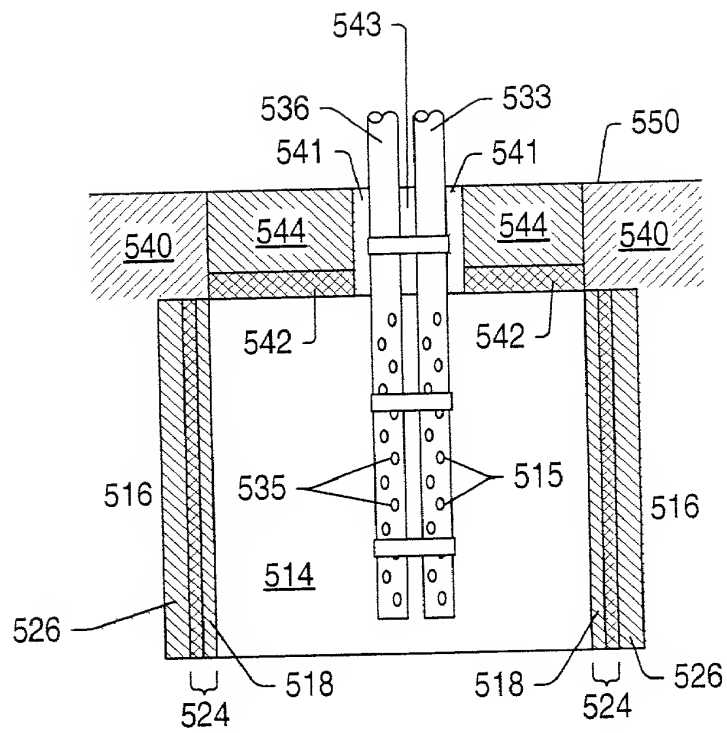


Fig. 13

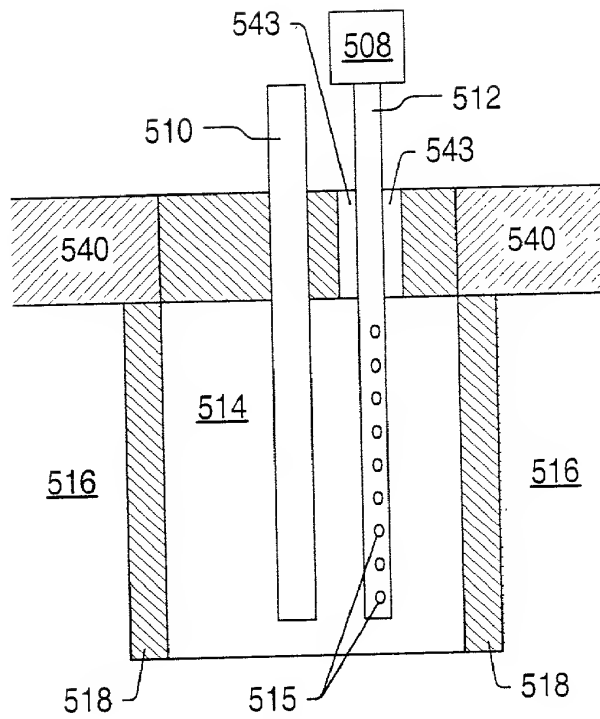


FIG. 14

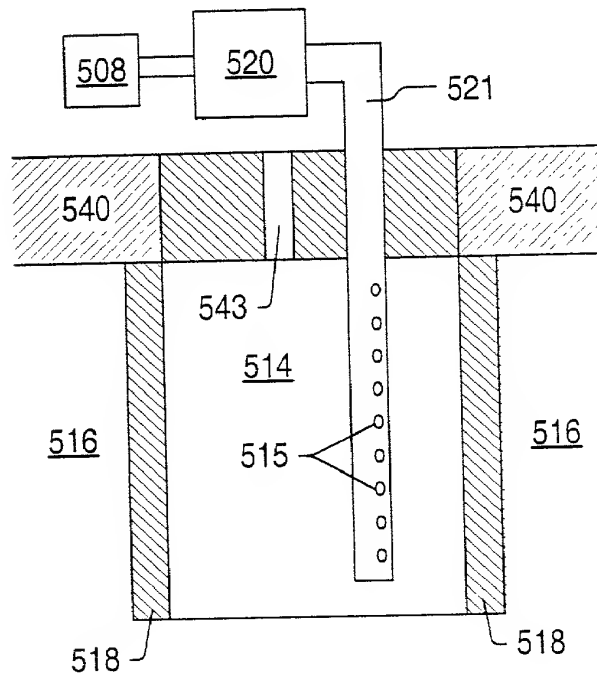


FIG. 15

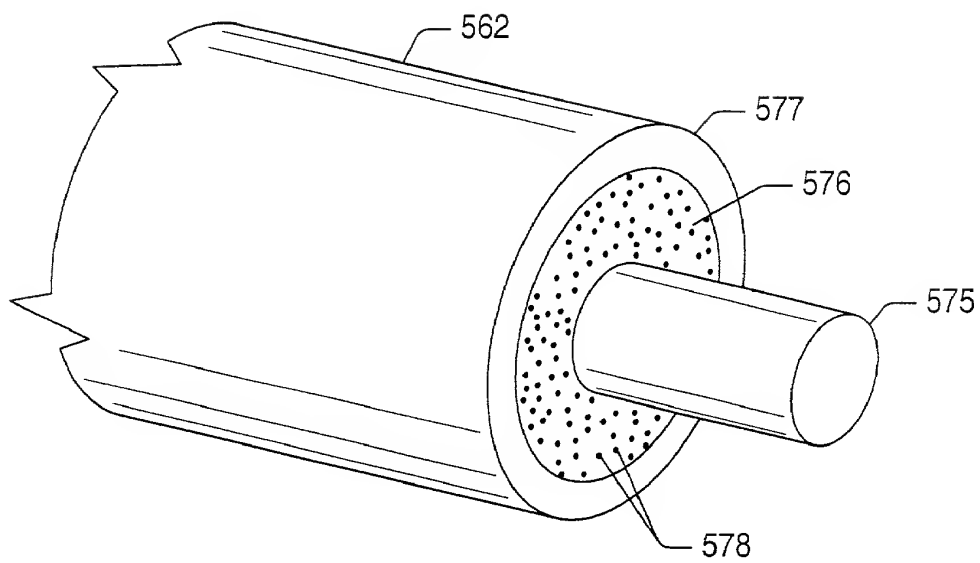


FIG. 16

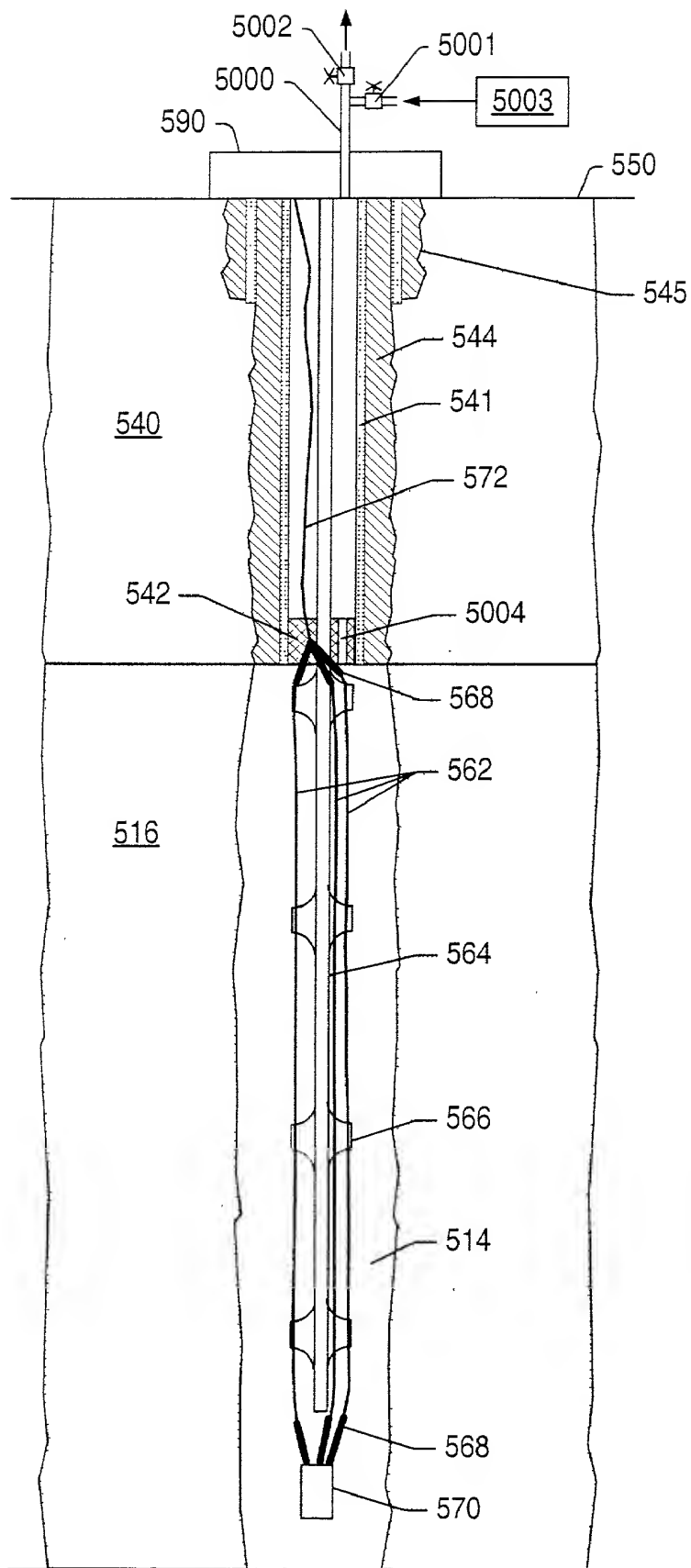


FIG. 17

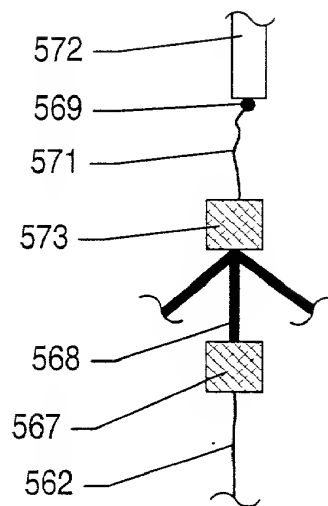


FIG. 17A

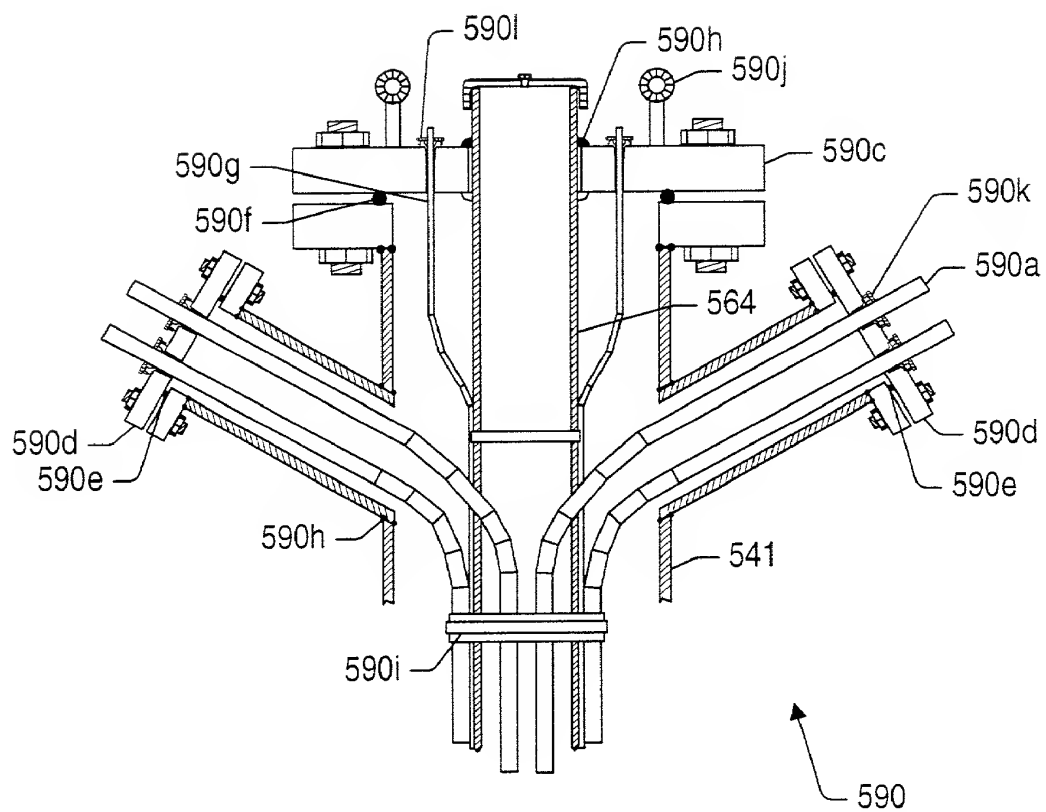


FIG. 18

FIG. 20 is a cross-sectional view of a device 580 in a closed position. The device 580 includes a housing 582 and a central shaft 584. A circular component 583 is positioned within the housing 582. The central shaft 584 is connected to a handle 591. The handle 591 is shown in a cross-sectional view, revealing a central shaft 592 and a handle body 593. The handle body 593 is shown in a cross-sectional view, revealing a central shaft 592 and a handle body 593. The handle body 593 is shown in a cross-sectional view, revealing a central shaft 592 and a handle body 593.

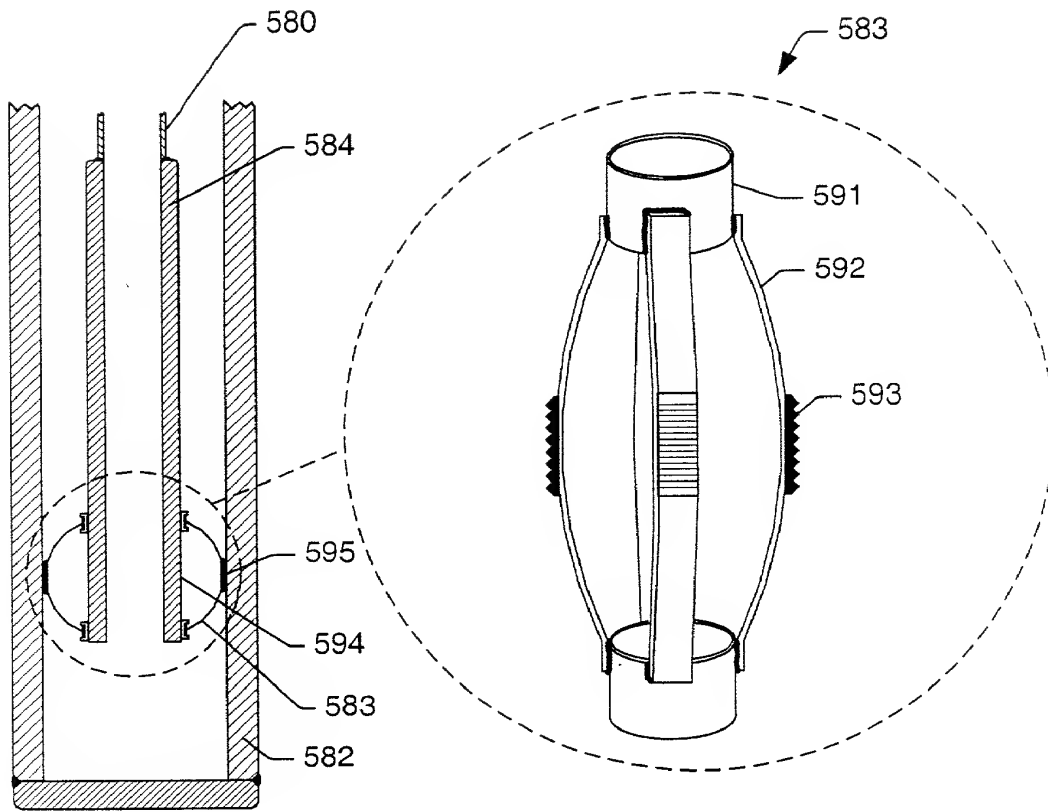


FIG. 20

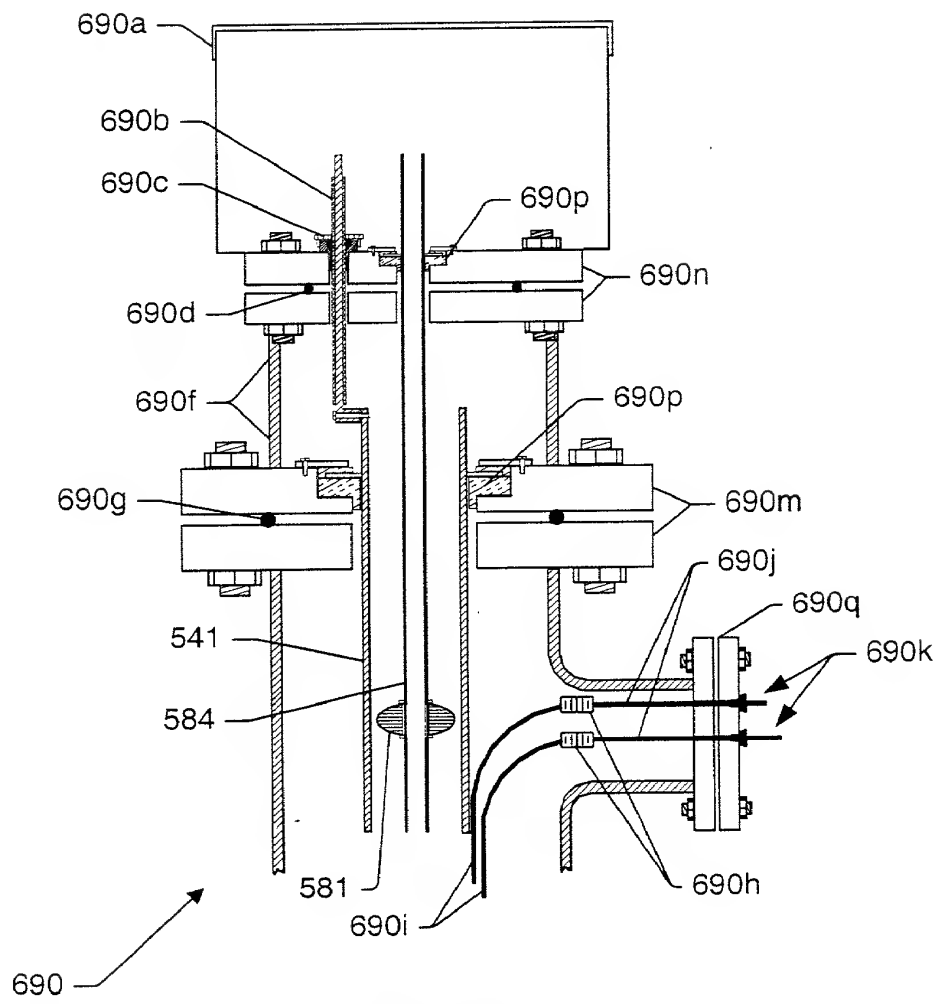


FIG. 21

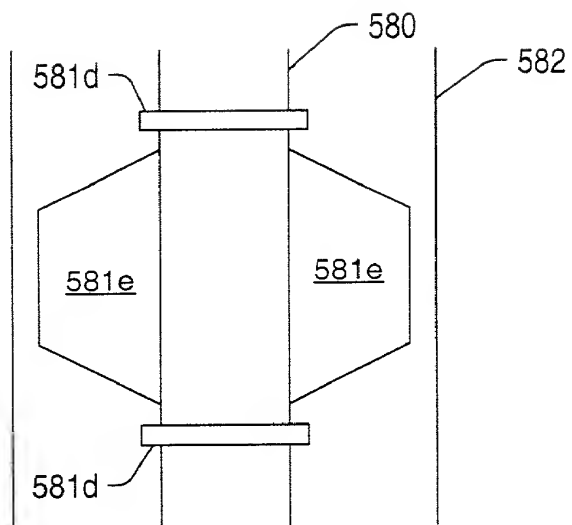


FIG. 23a

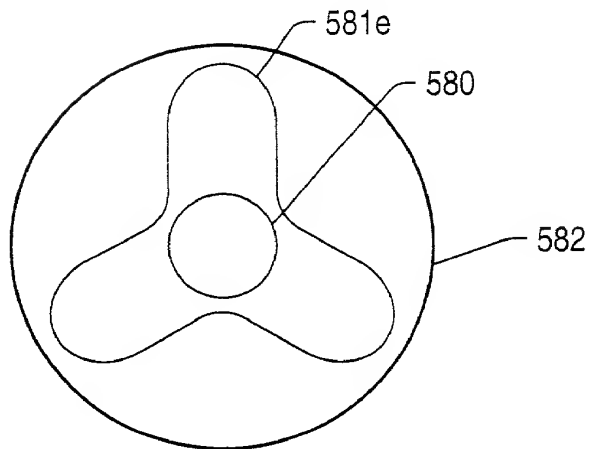


FIG. 23b

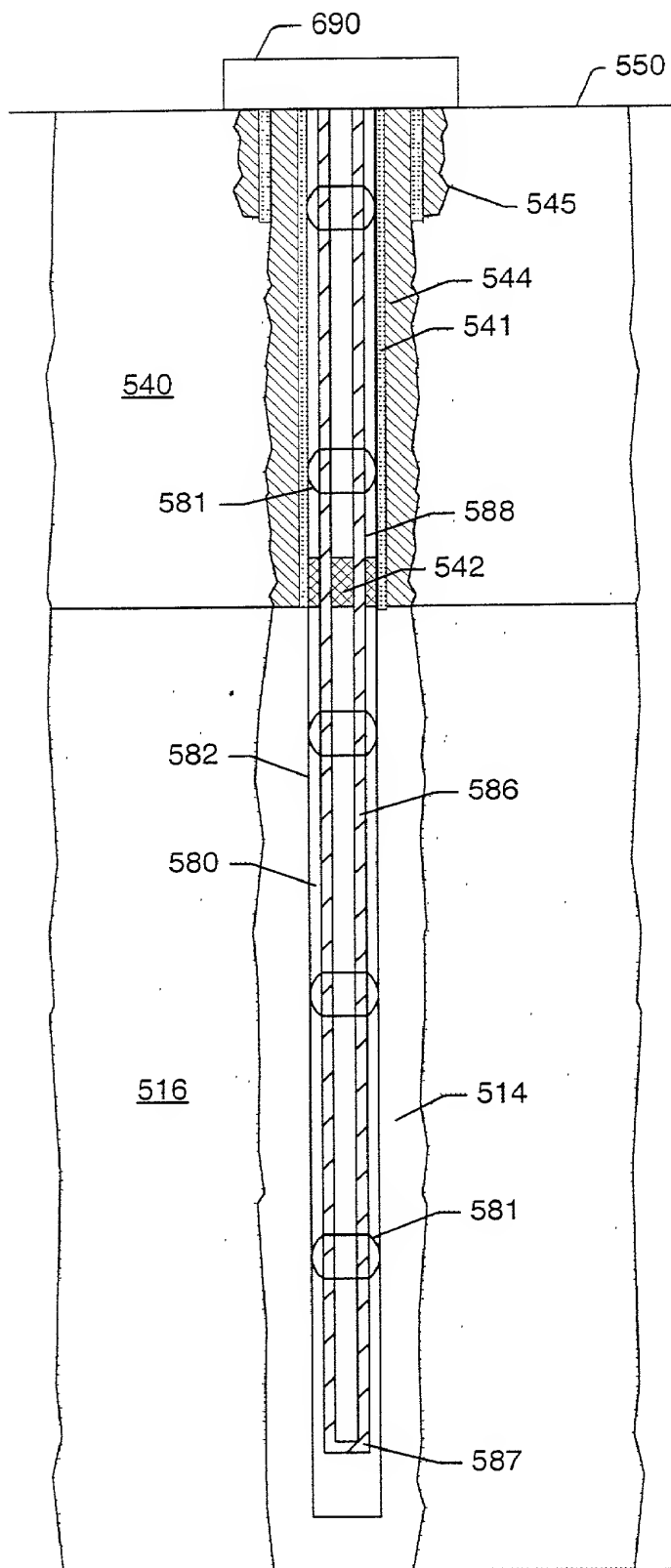


Fig. 24

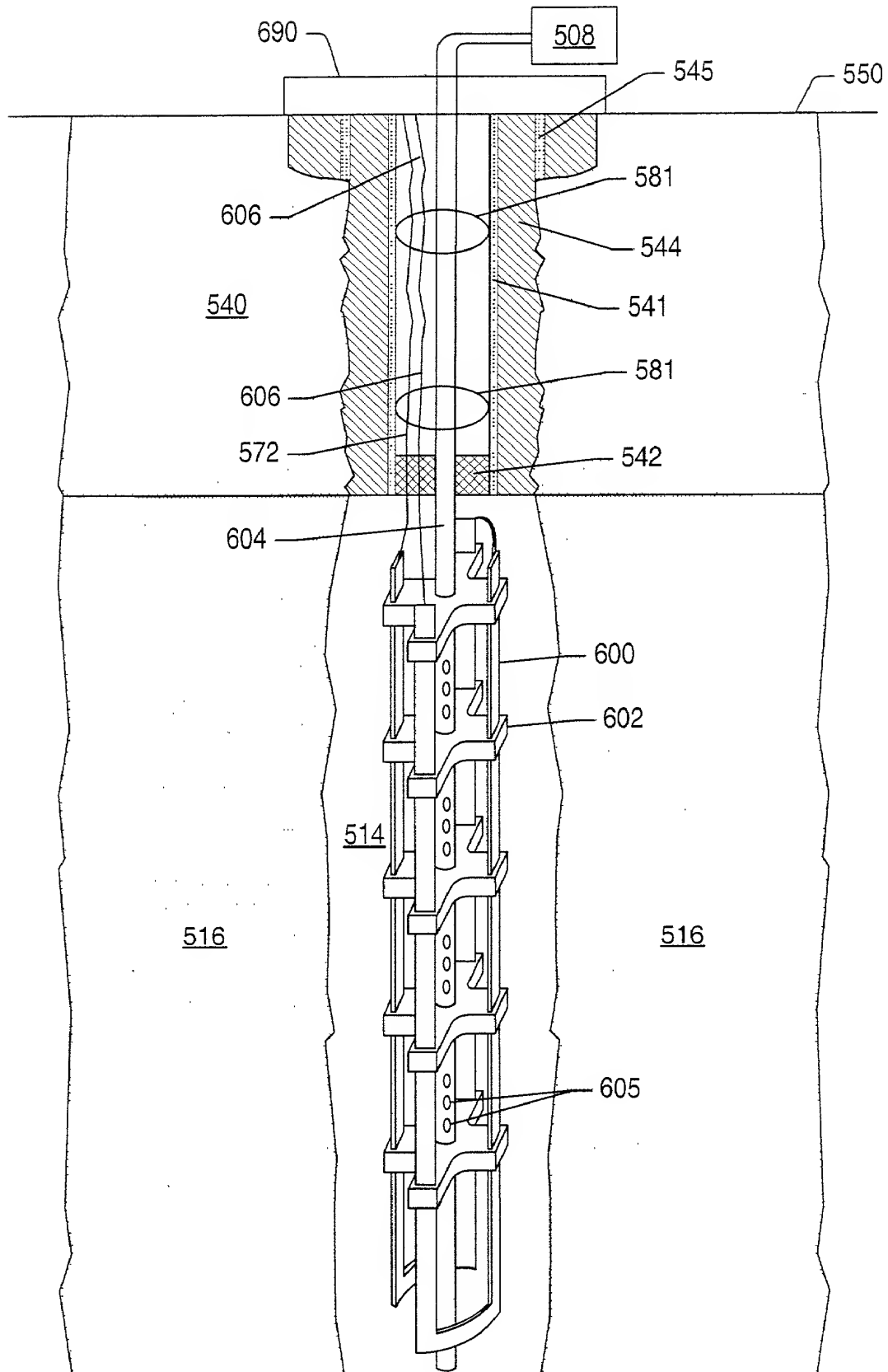


FIG. 25

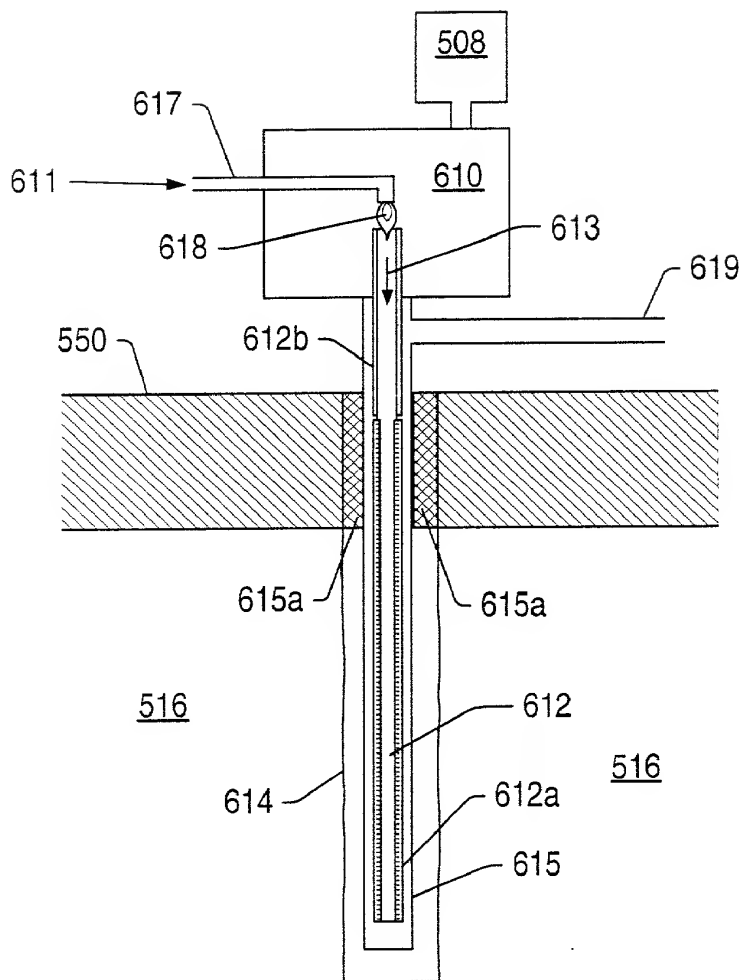


FIG. 26

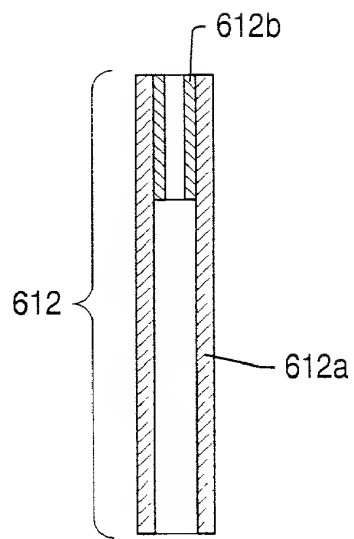


FIG. 27

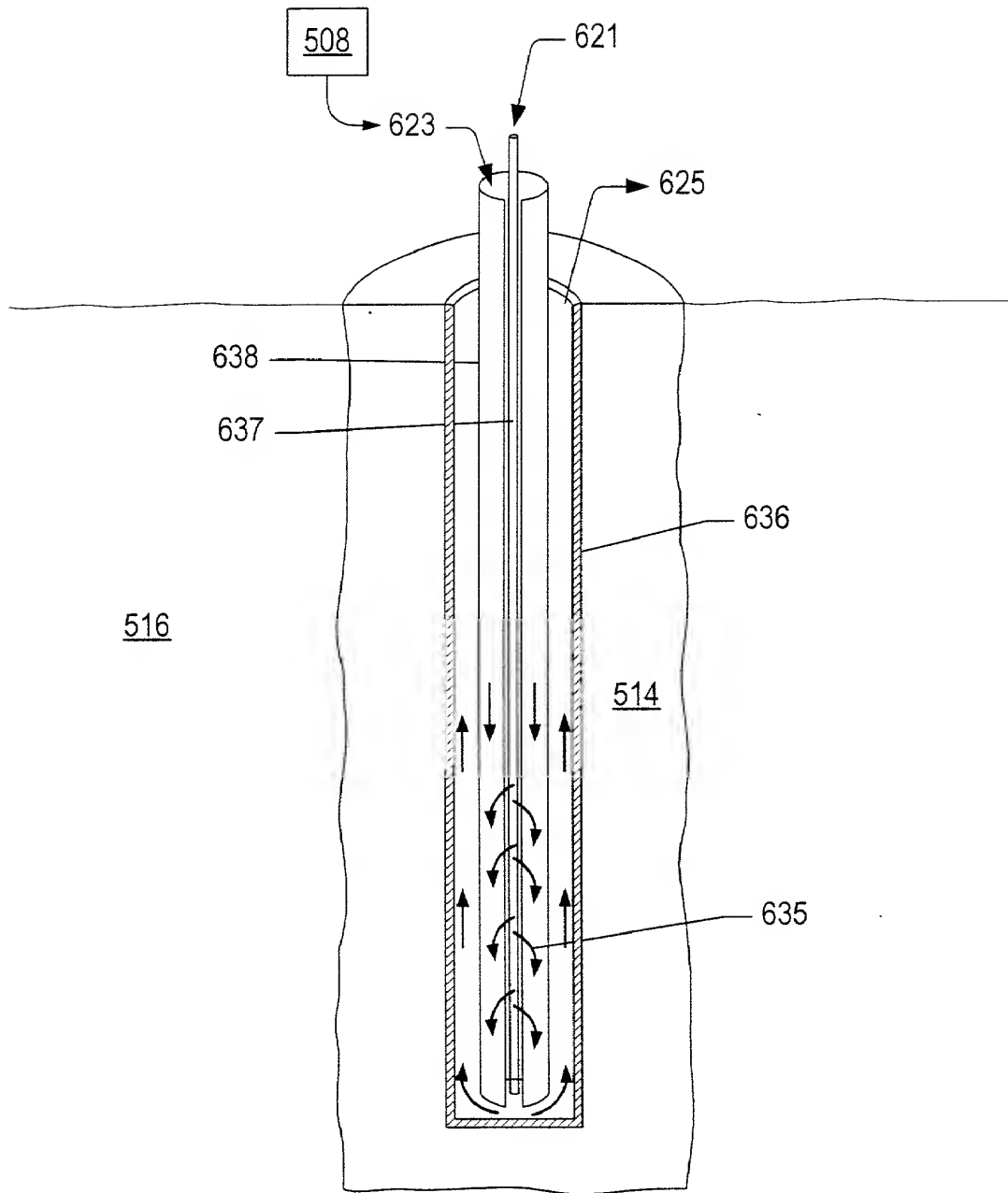


FIG. 28

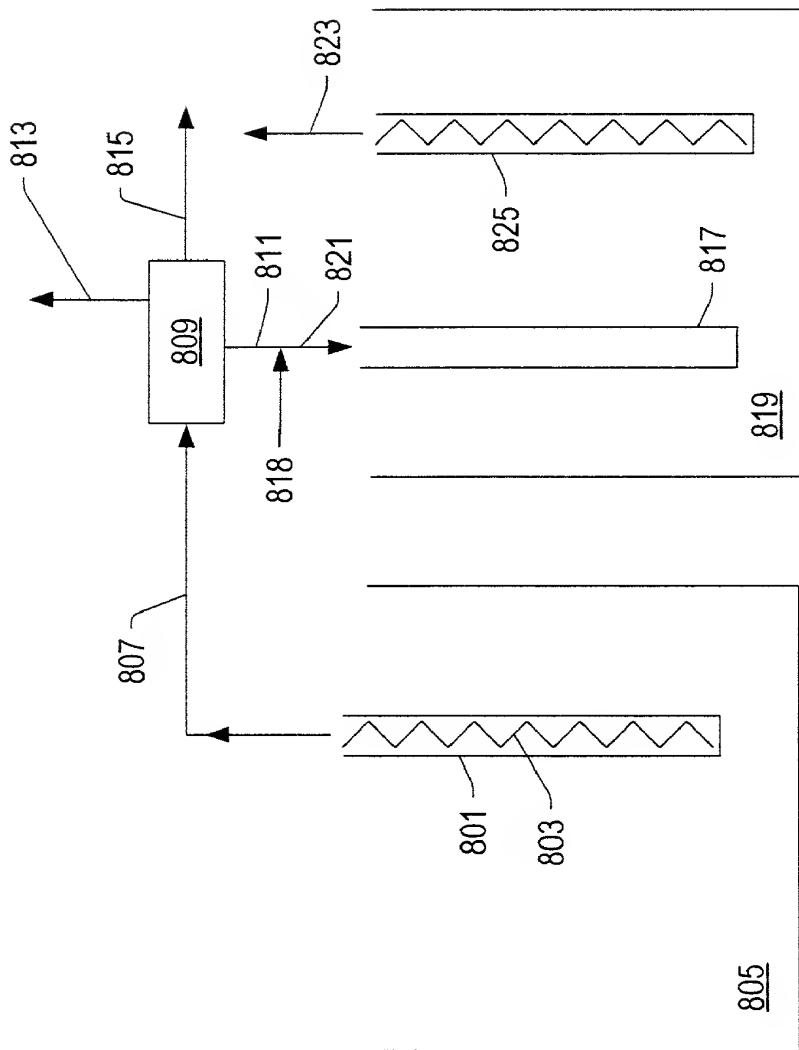


FIG. 29

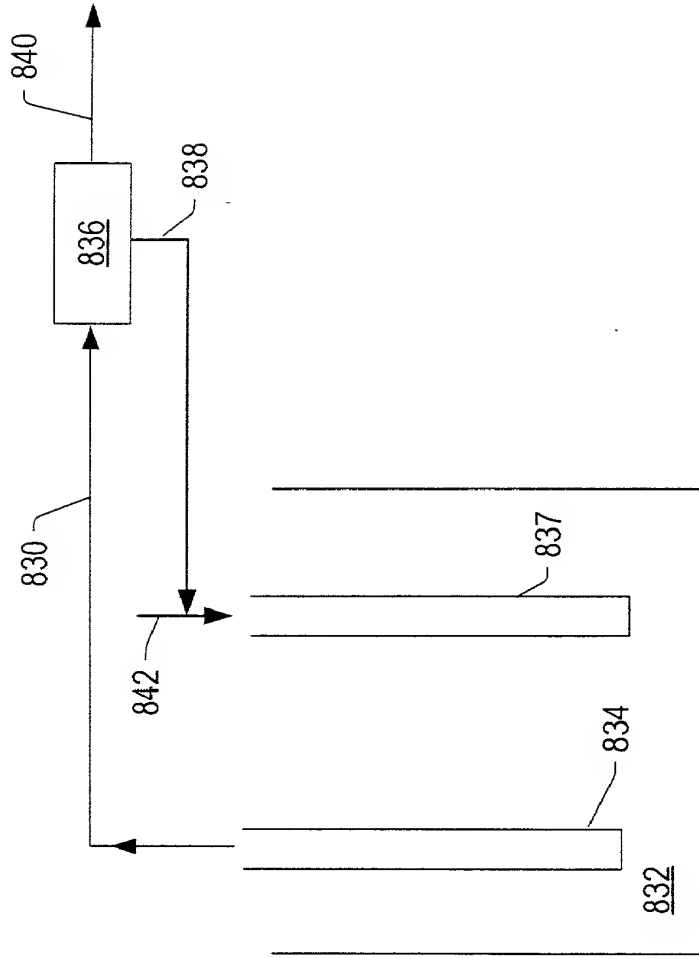


FIG. 30

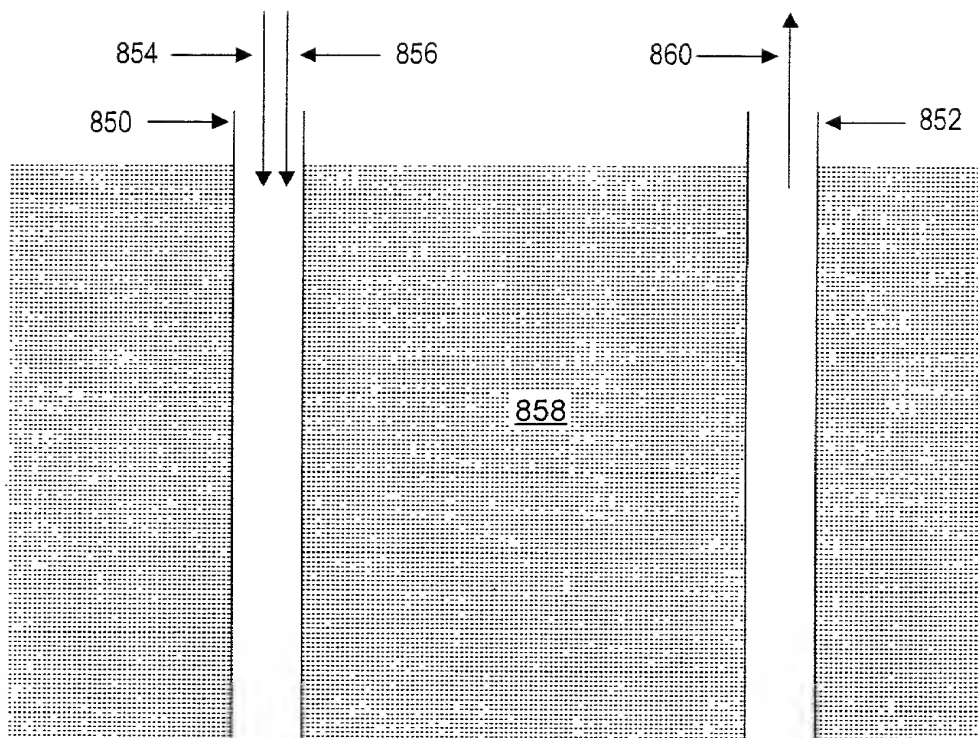


FIG. 31

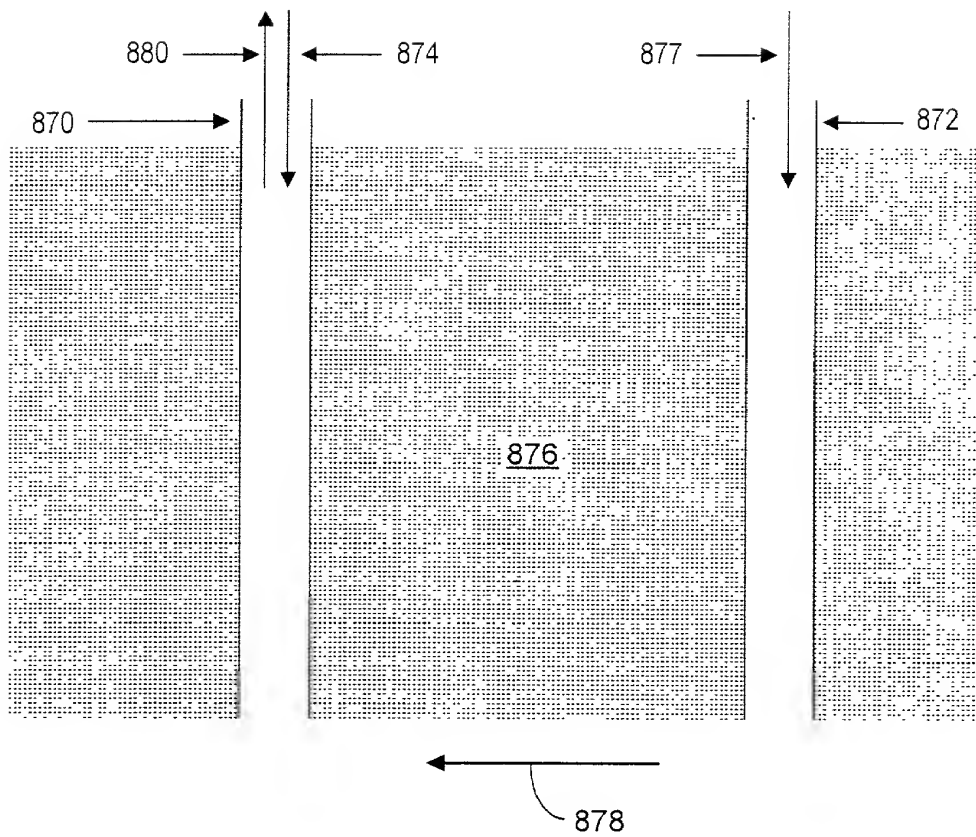


FIG. 32

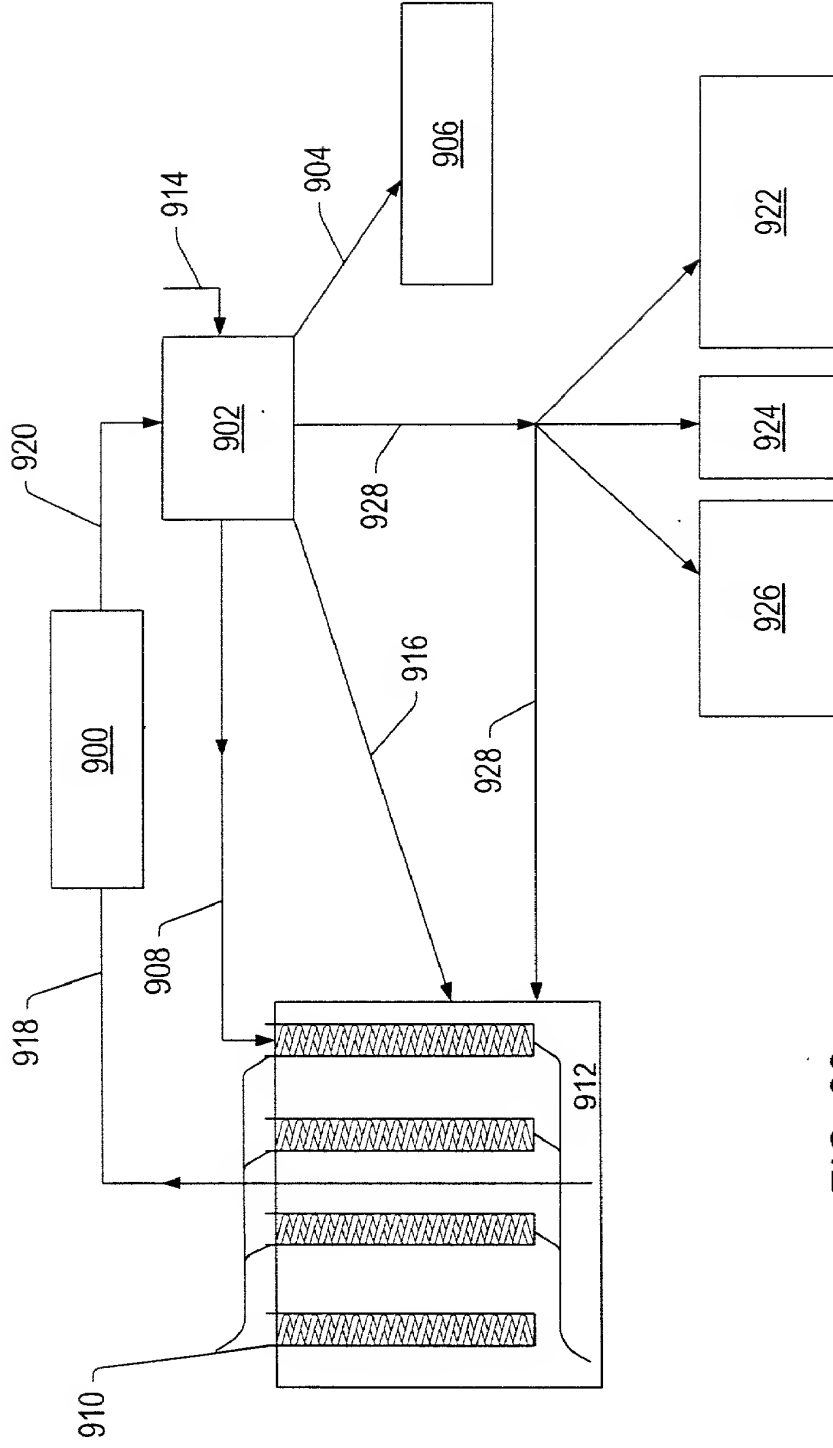


FIG. 33

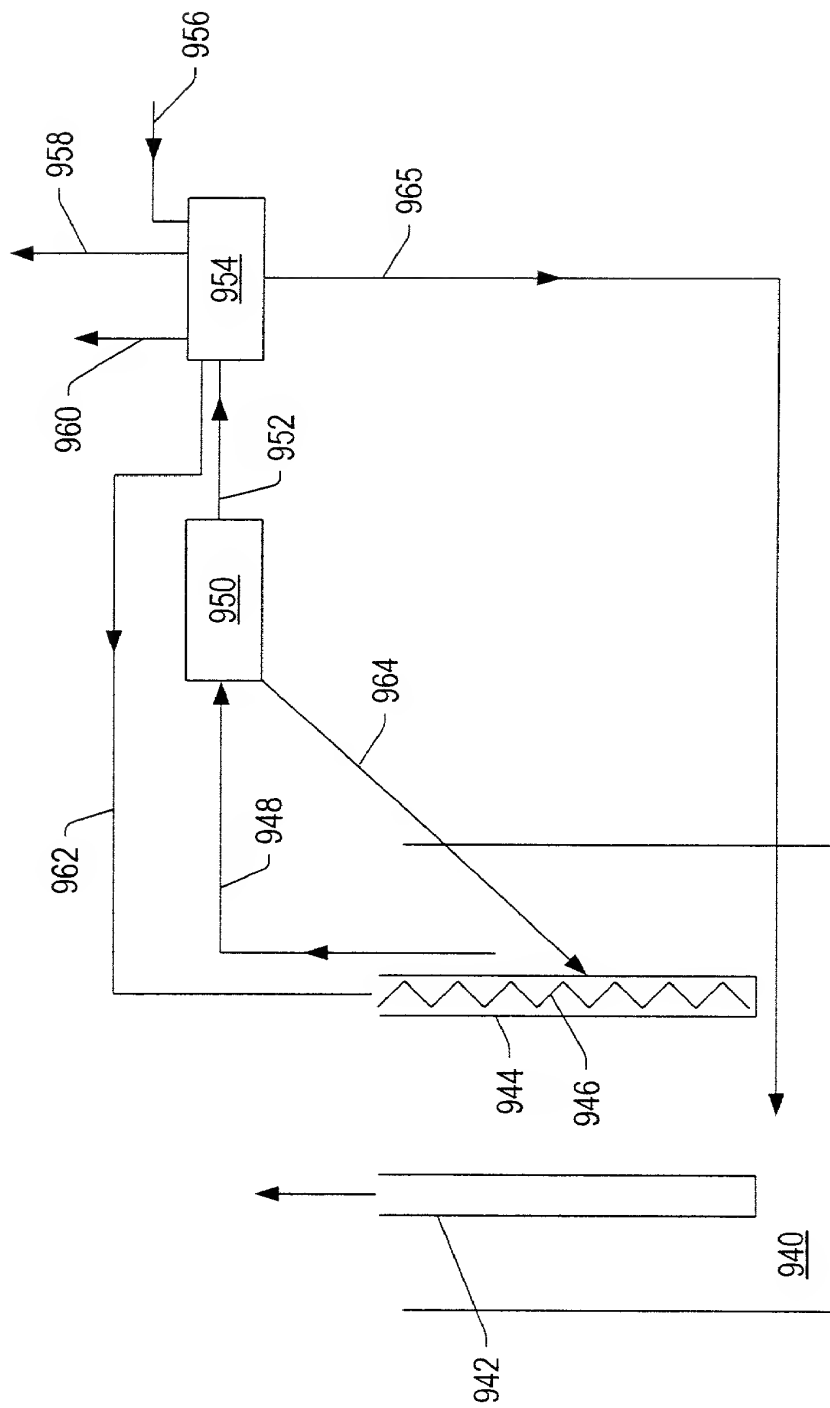


FIG. 34

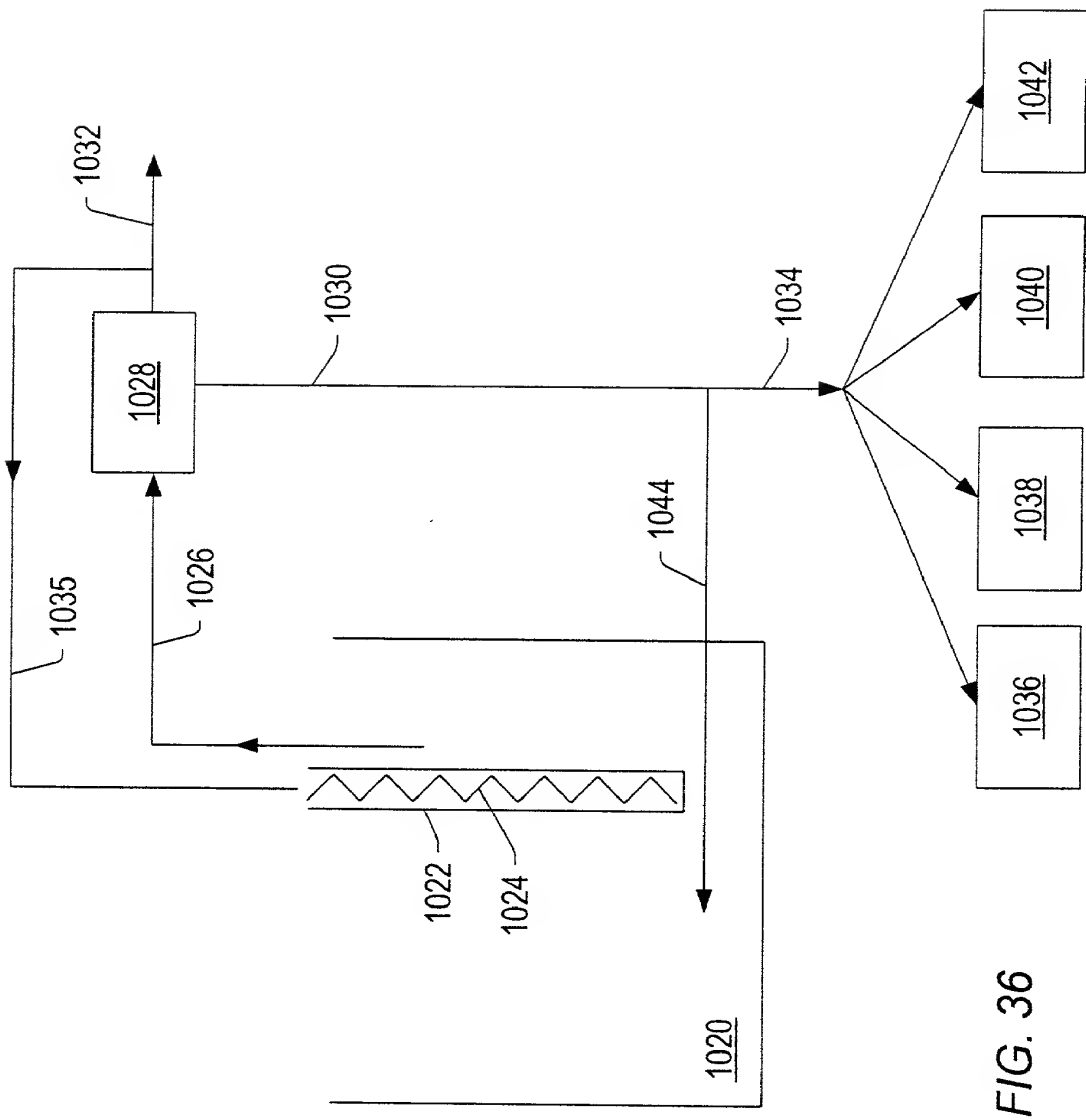


FIG. 36

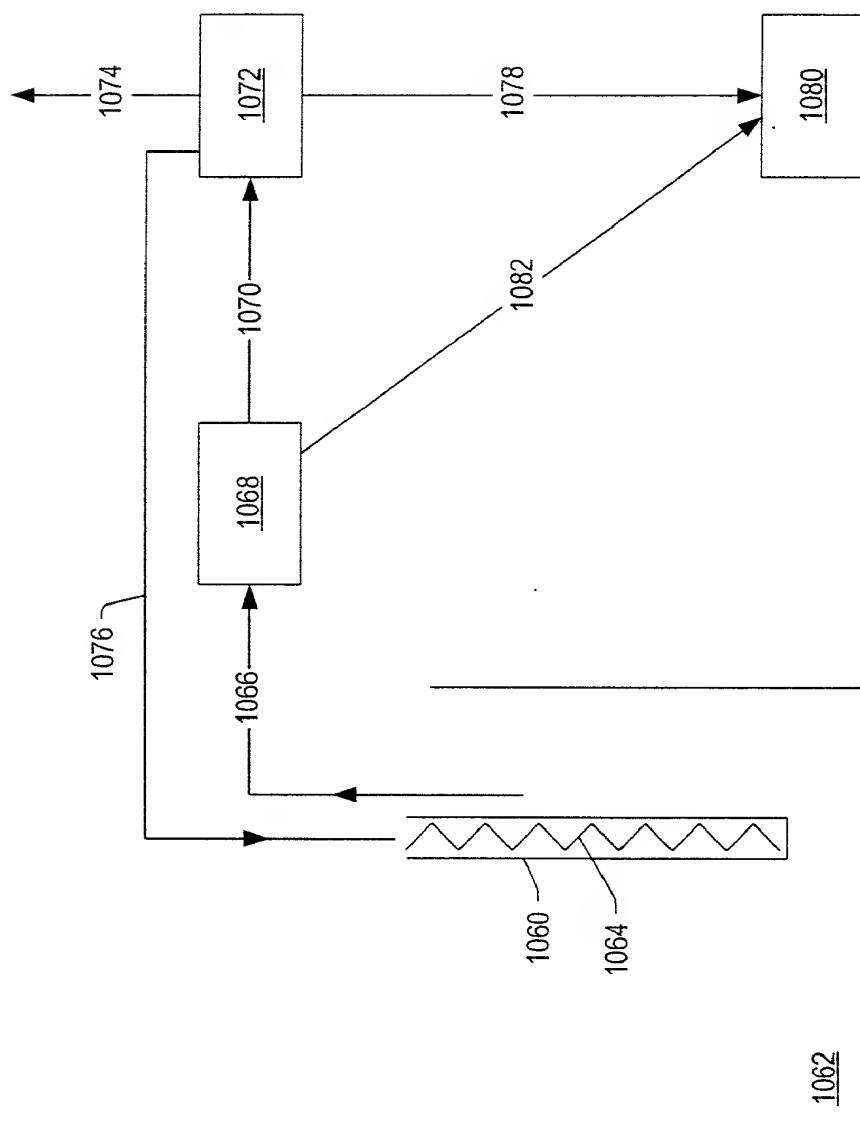


FIG. 37

FIG. 38 is a block diagram of a system 1000. The system 1000 includes a processor 1090, a memory 1092, a network interface 1094, and a user interface 1096. The processor 1090 is connected to the memory 1092, the network interface 1094, and the user interface 1096. The network interface 1094 is connected to a network 1100. The user interface 1096 is connected to a user 1102. The user 1102 is connected to a device 1106. The device 1106 is connected to a server 1108.

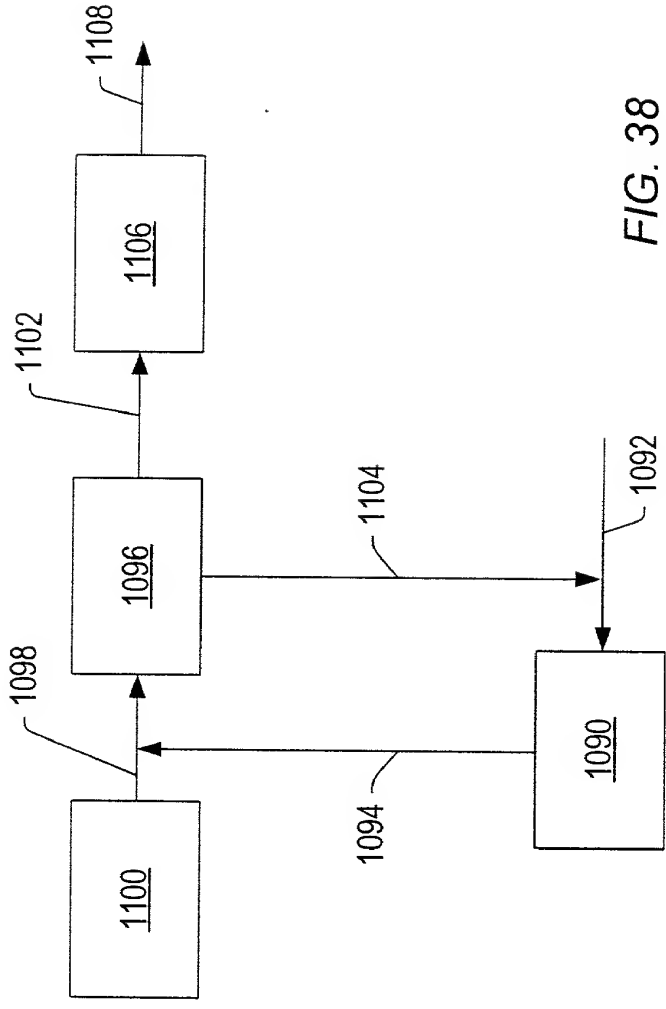


FIG. 38

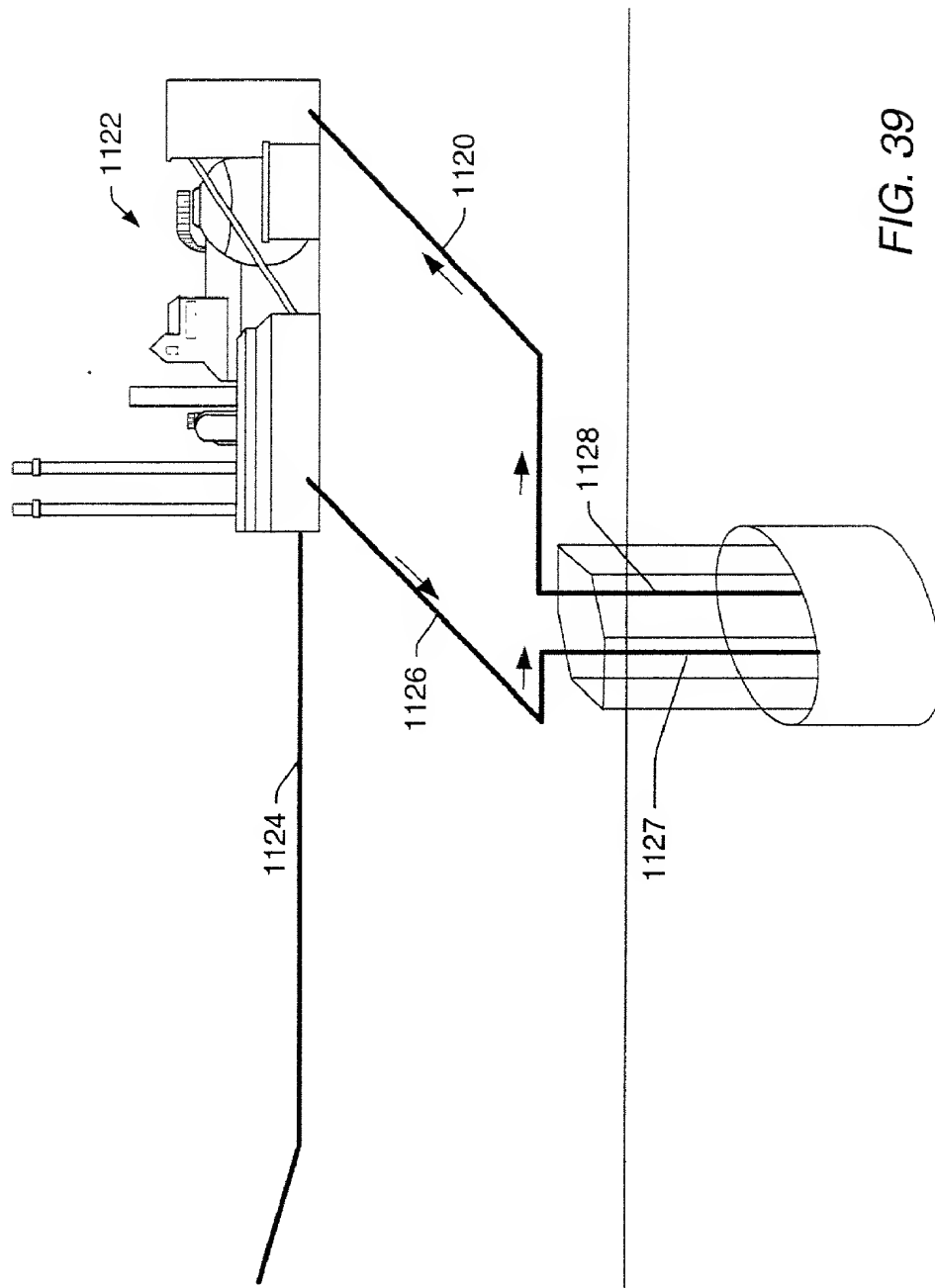


FIG. 39

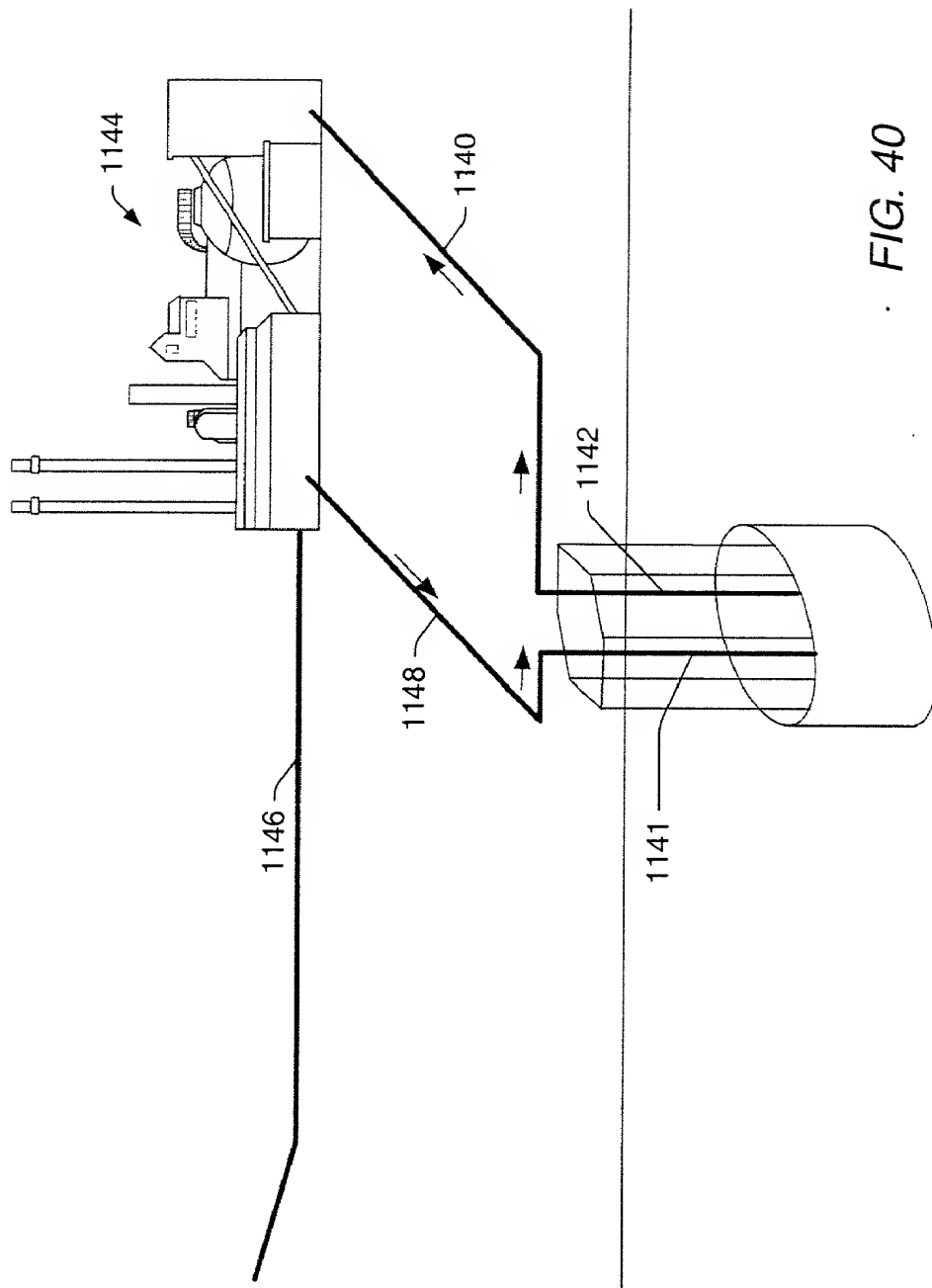


FIG. 40

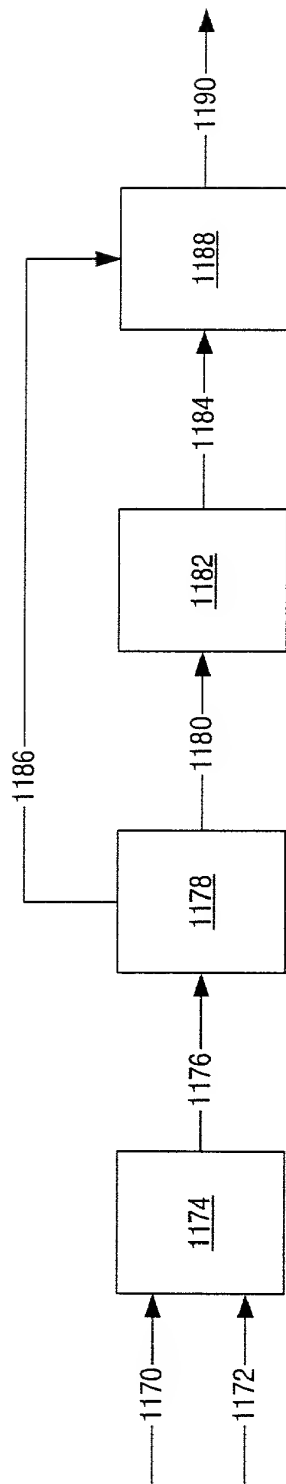


FIG. 41

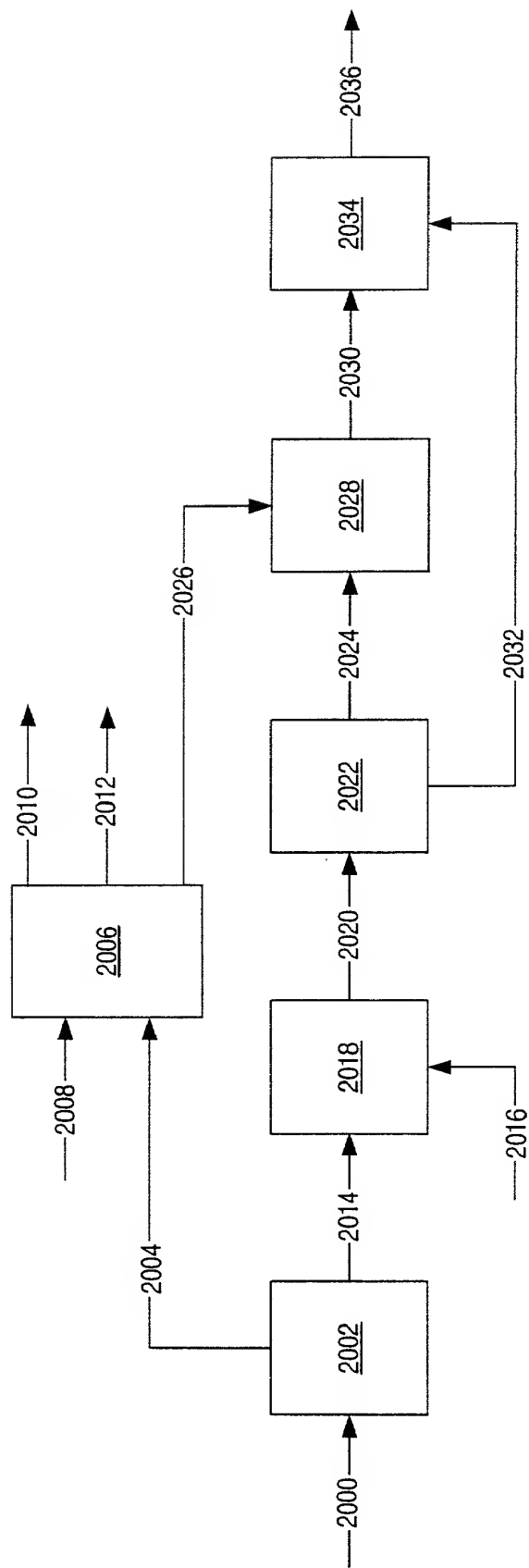


FIG. 42

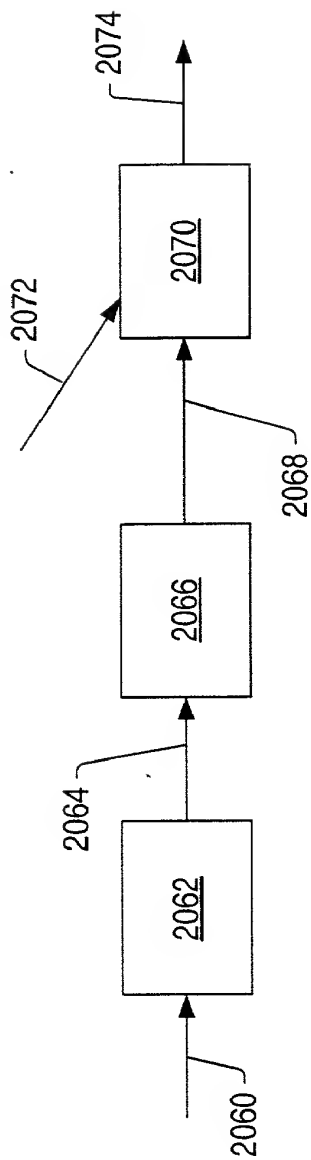


FIG. 43

FIG. 44 is a cross-sectional view of a device 2200, showing a central region 2200 and side regions 2210. The device includes a top layer 2204, a middle layer 2202, and a bottom layer 2204. Arrows indicate the flow of material or energy from the top layer 2204 through the middle layer 2202 to the bottom layer 2204. The side regions 2210 are shown on either side of the central region 2200, with arrows indicating flow from the side regions 2210 towards the central region 2200. The device is labeled with reference numerals 2200, 2202, 2204, 2210, and 2212.

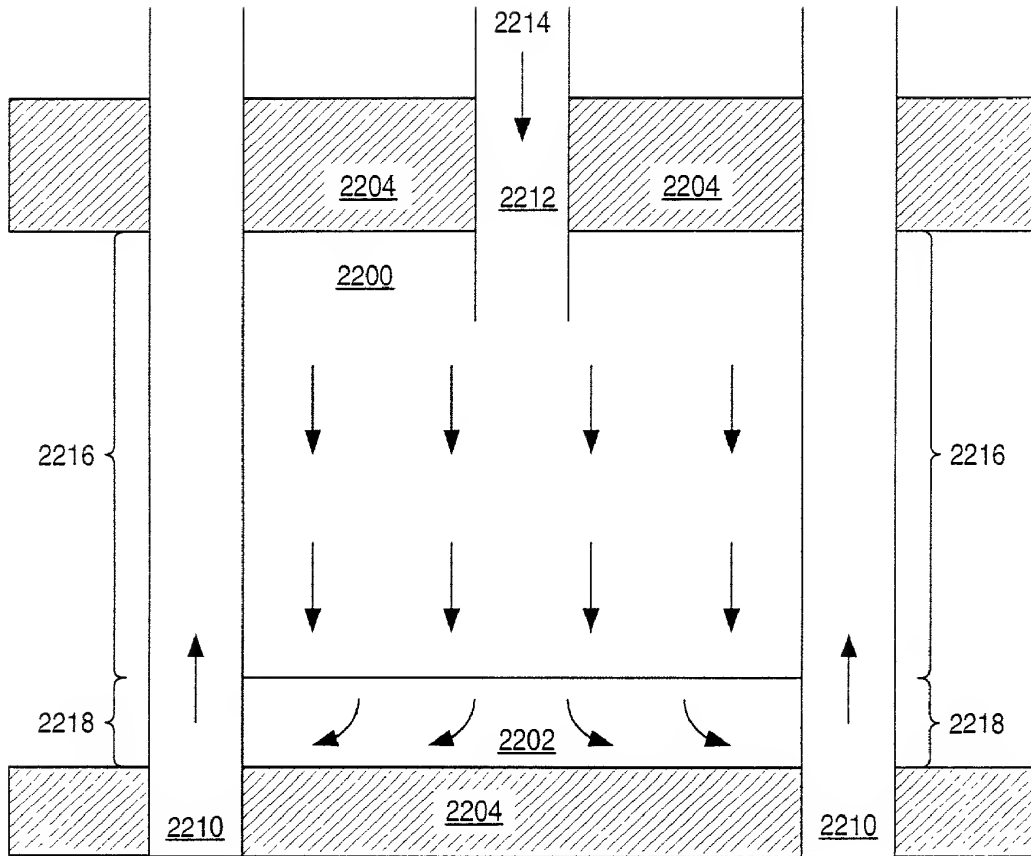


FIG. 44

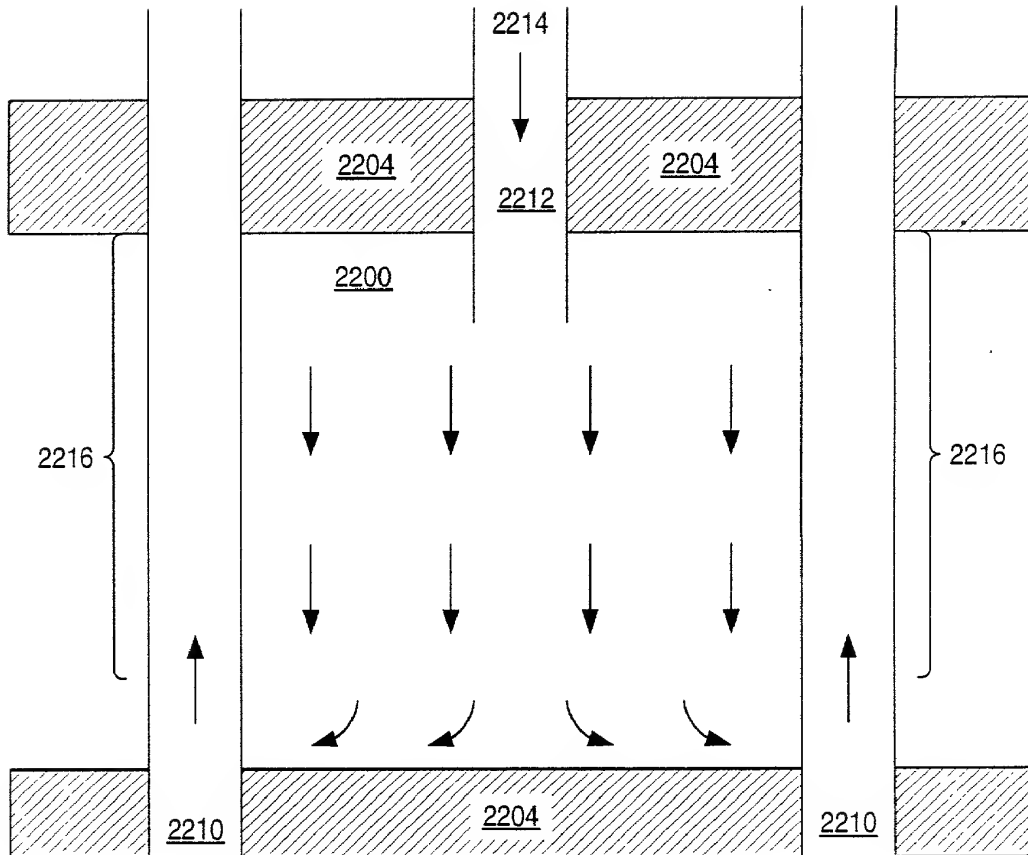


FIG. 45

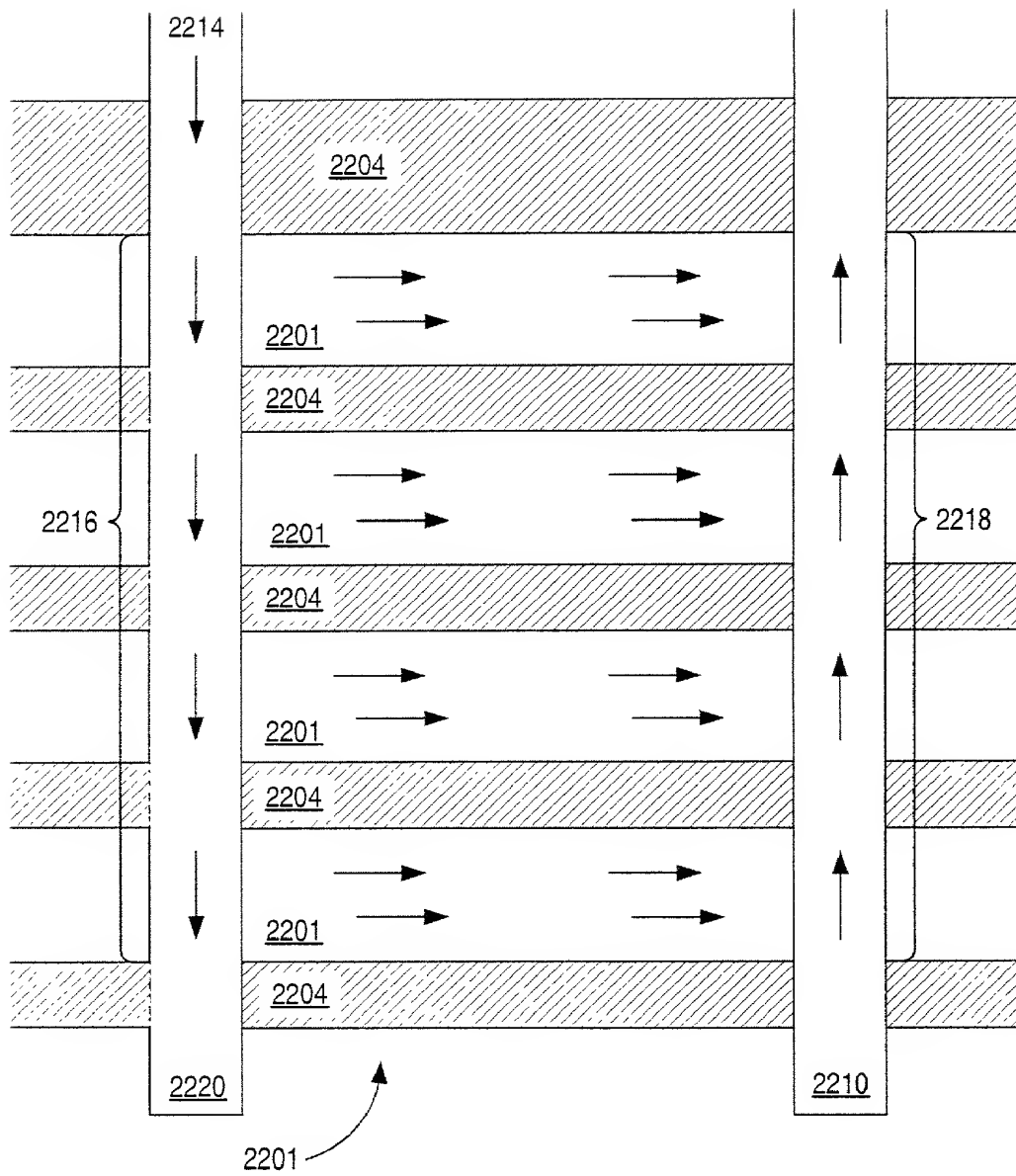


FIG. 46

FIG. 47 is a cross-sectional view of a device 2200, showing a substrate 2204 and a plurality of conductive traces 2300. The traces 2300 are disposed on the substrate 2204 and are electrically connected to a pad 2300. The pad 2300 is disposed on the substrate 2204 and is electrically connected to the traces 2300. The pad 2300 is disposed on the substrate 2204 and is electrically connected to the traces 2300.

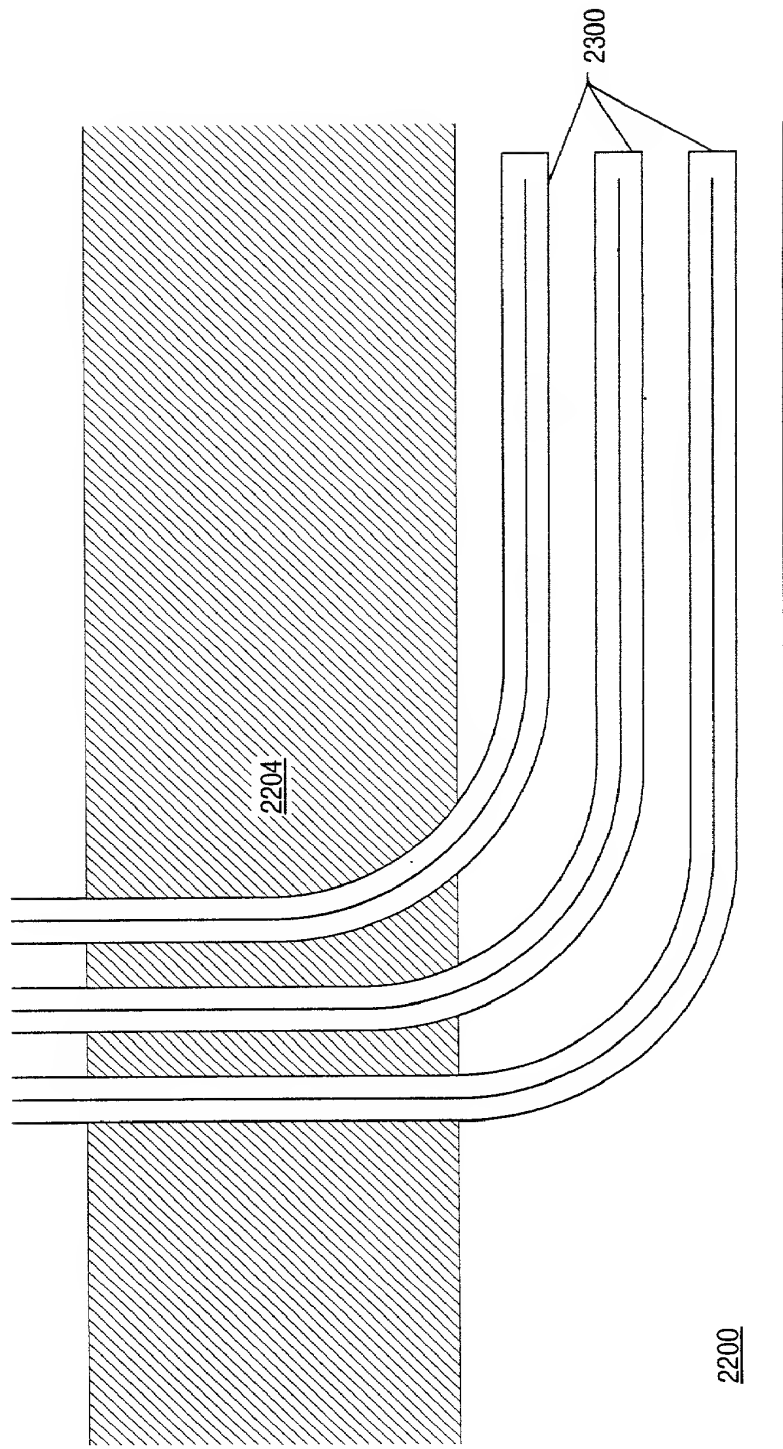


FIG. 47

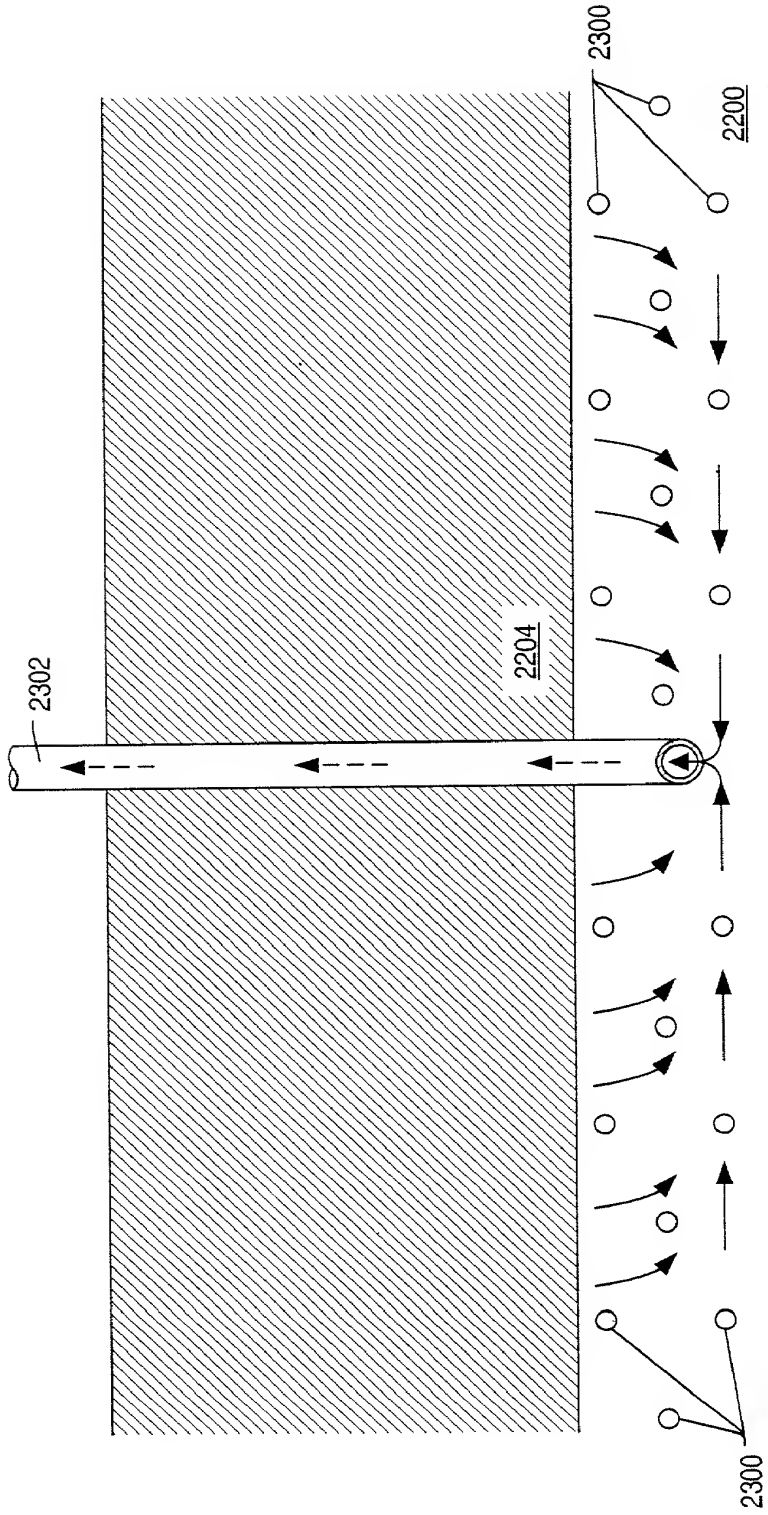


FIG. 48

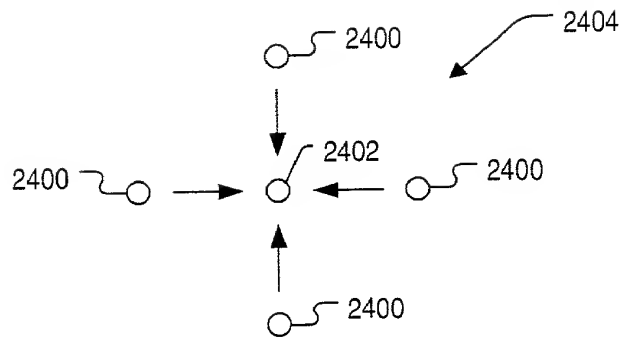


FIG. 49

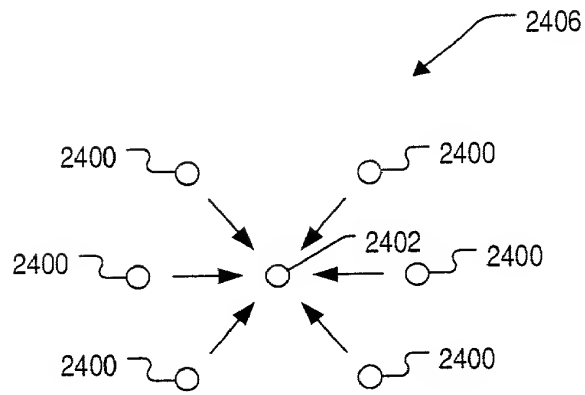


FIG. 50

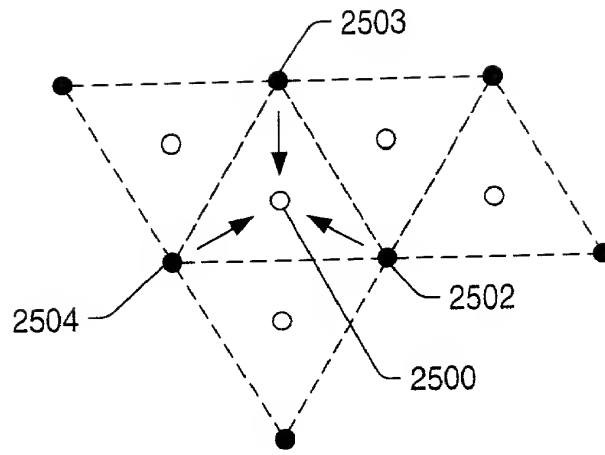


FIG. 51

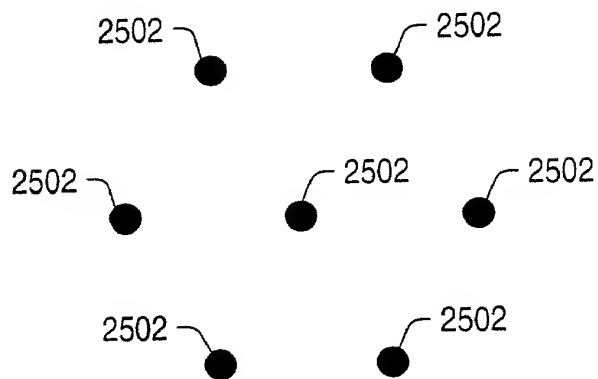


FIG. 52

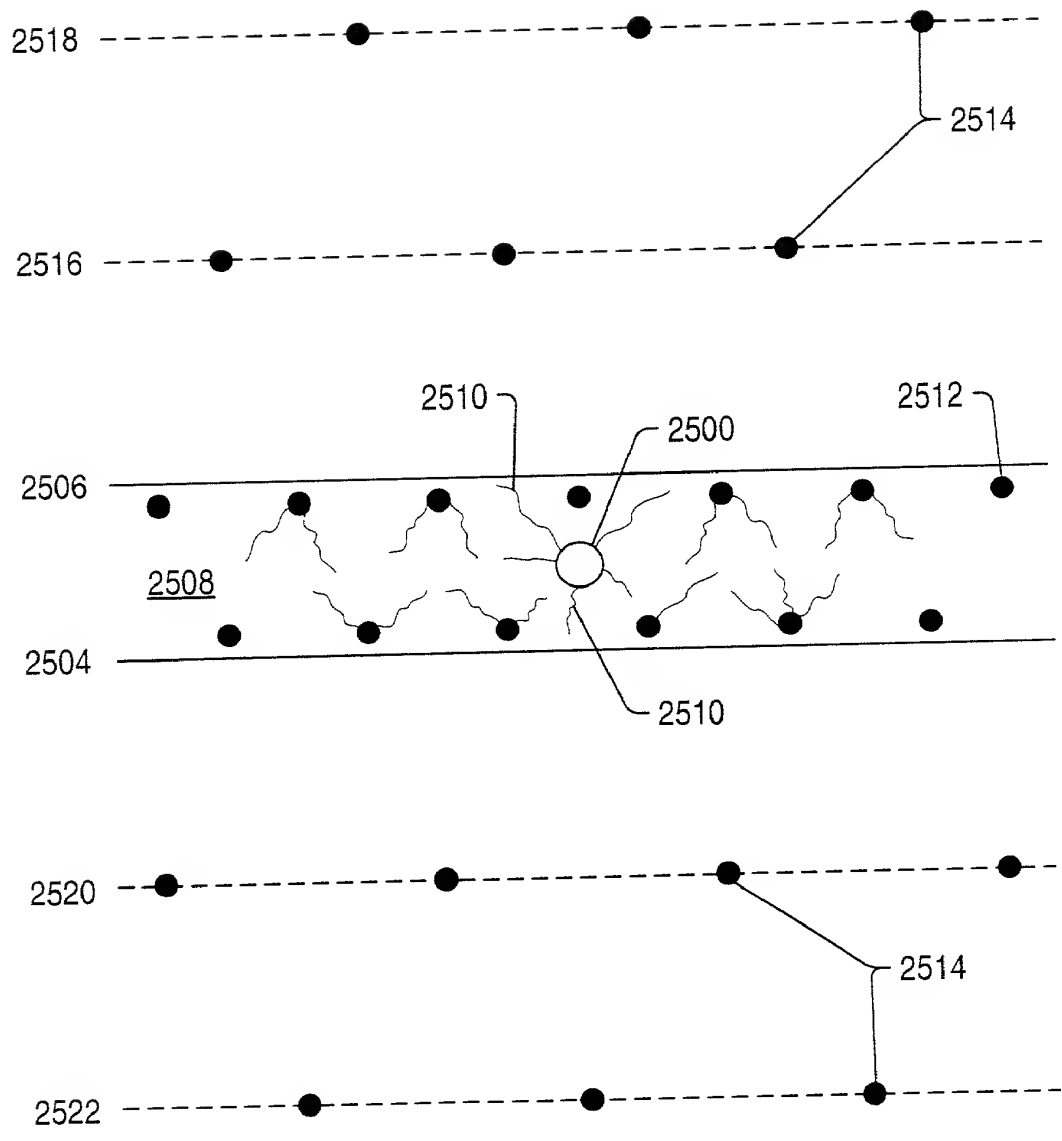


FIG. 53

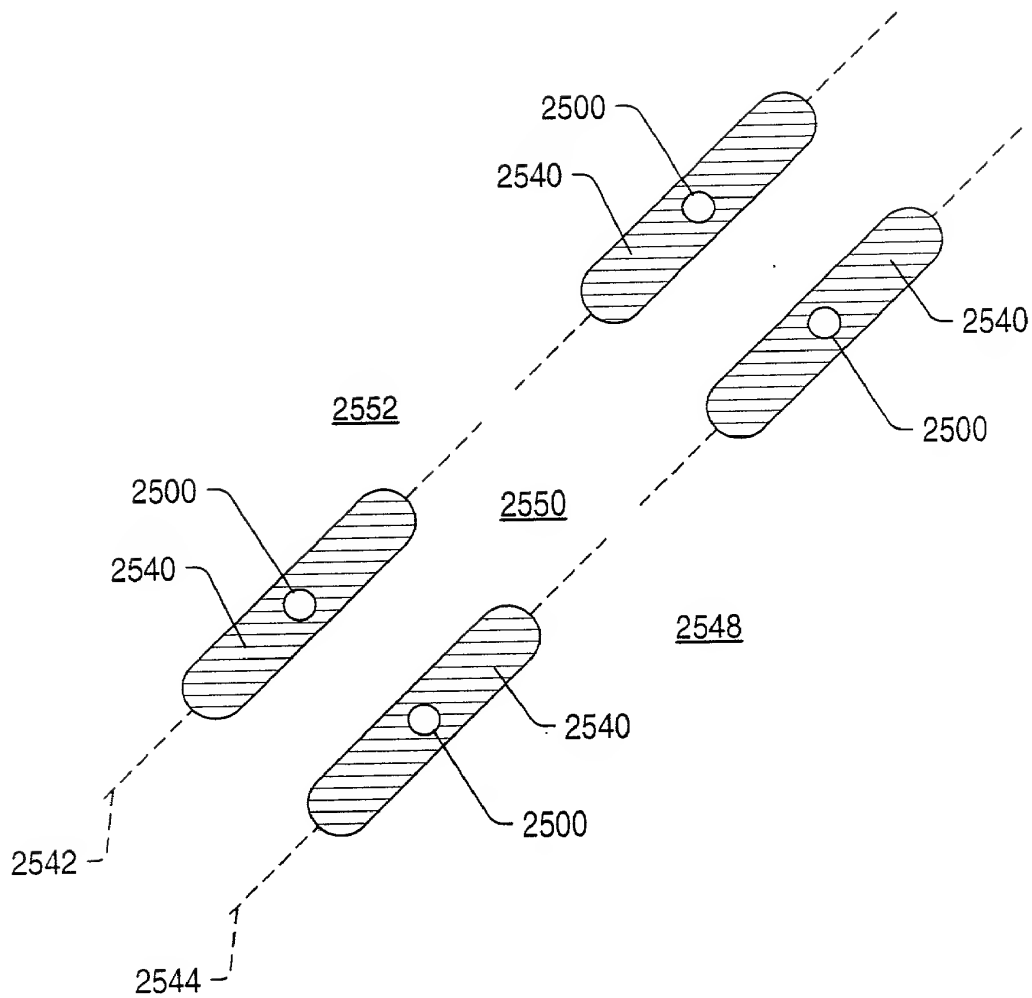


FIG. 54

FIG. 55 is a schematic diagram of a system 2600 for controlling a vehicle 2602. The system 2600 includes a processor 2604 and a memory 2606. The processor 2604 is configured to receive sensor data 2608 from a sensor 2610 and to output control signals 2612 to an actuator 2614. The actuator 2614 is configured to control the vehicle 2602. The system 2600 is configured to control the vehicle 2602 based on the sensor data 2608.

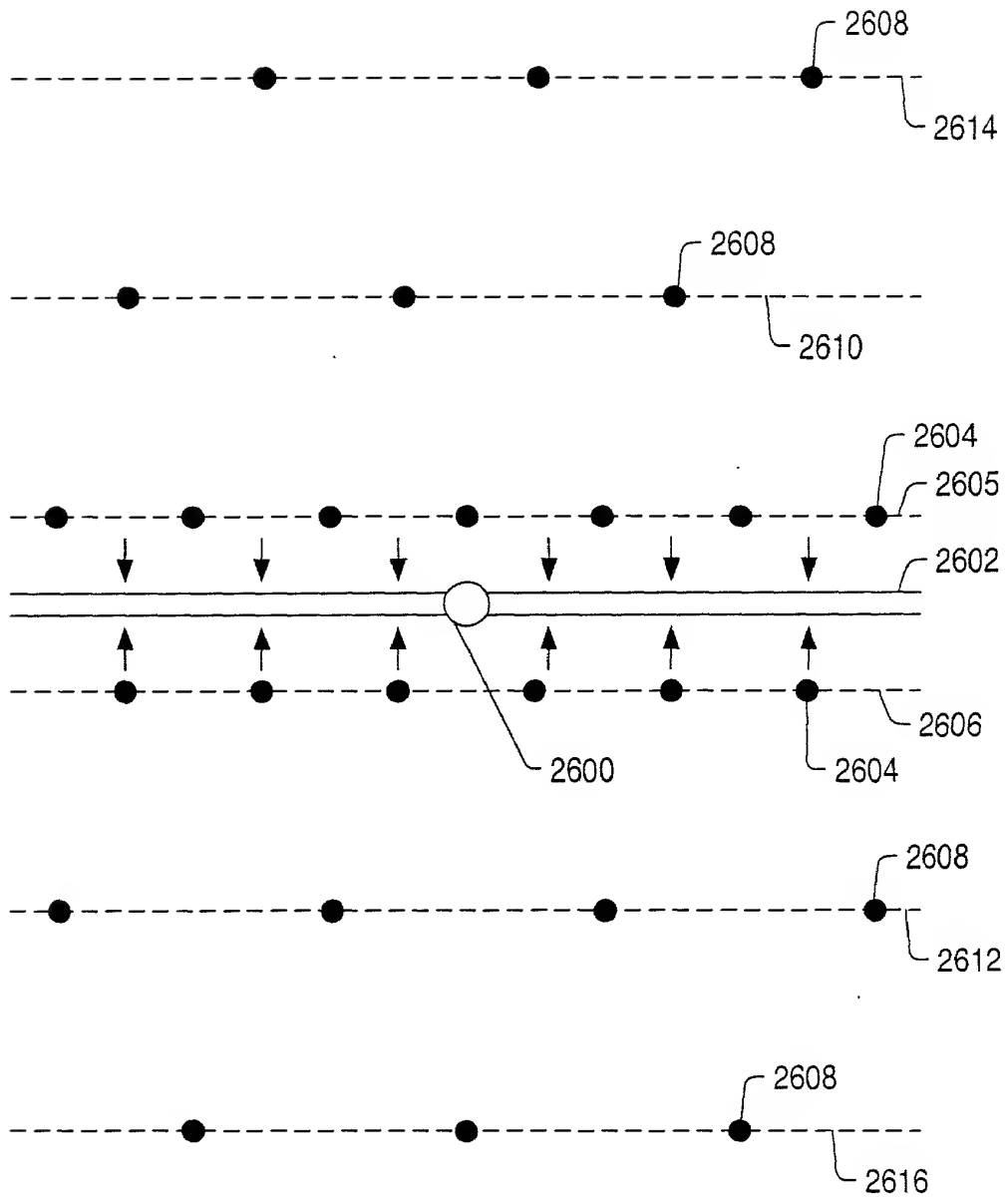


FIG. 55

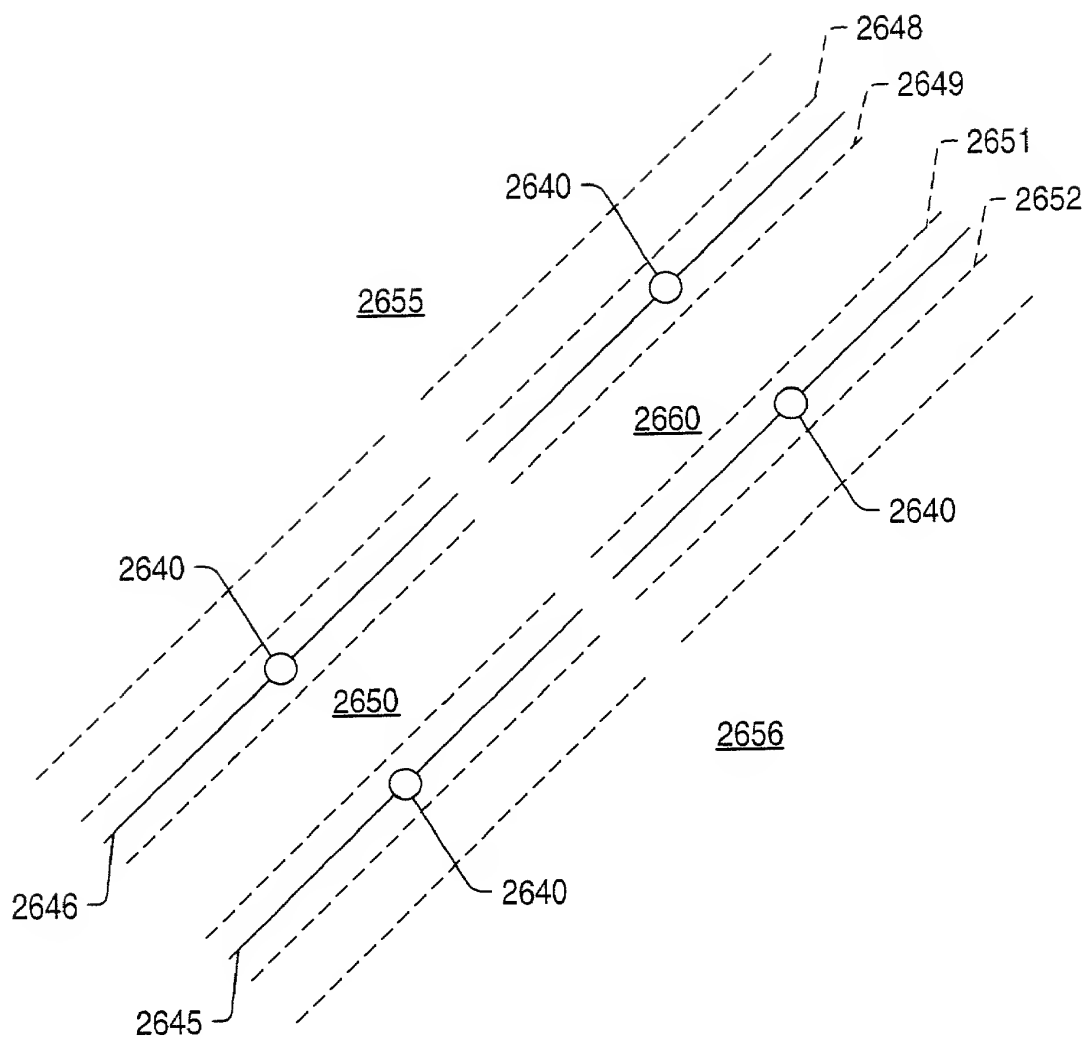


FIG. 56

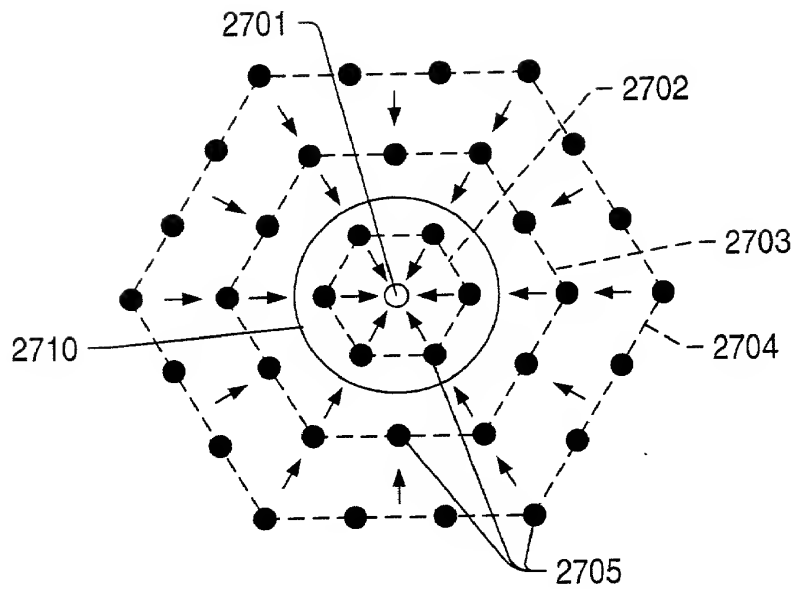


FIG. 57

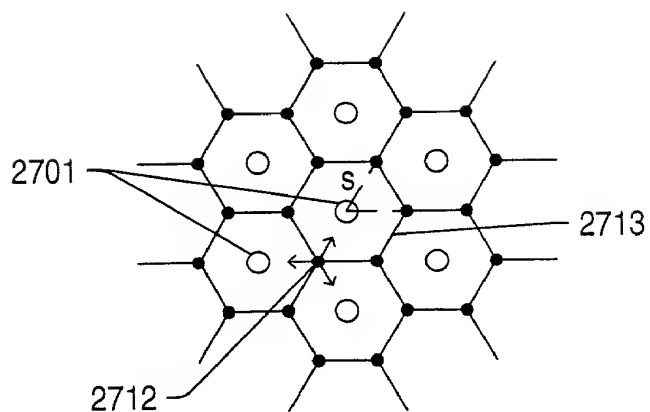


FIG. 58

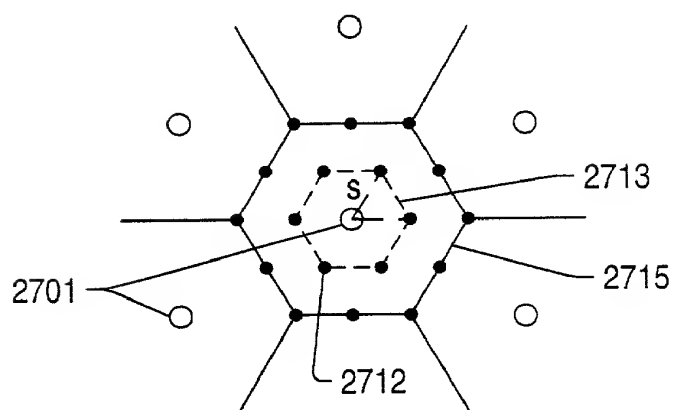


FIG. 59

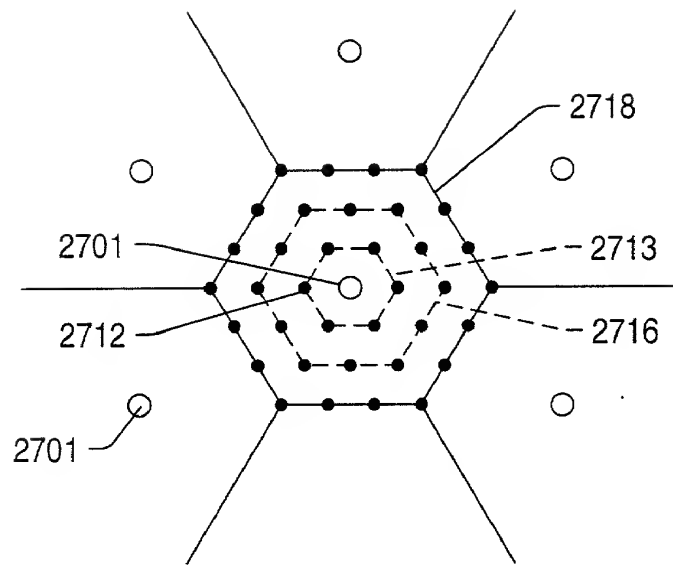


FIG. 60

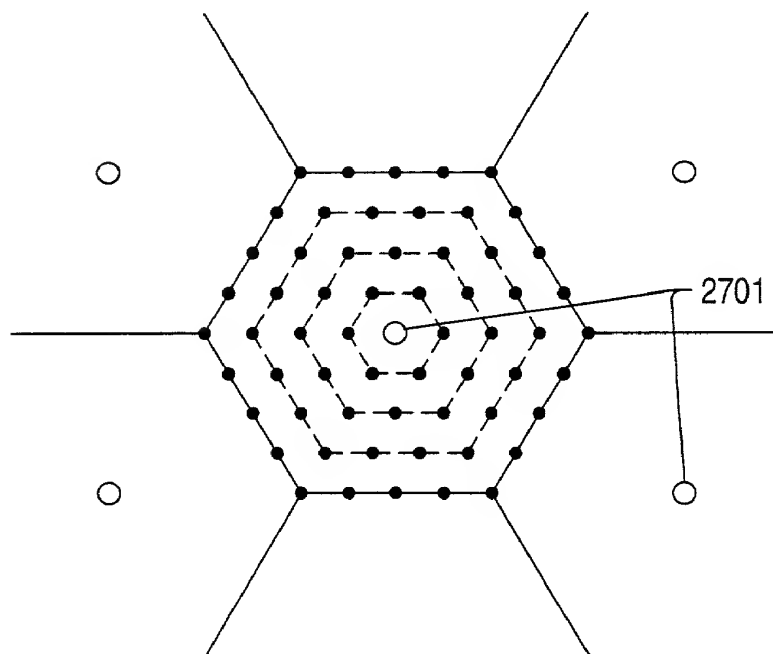


FIG. 61

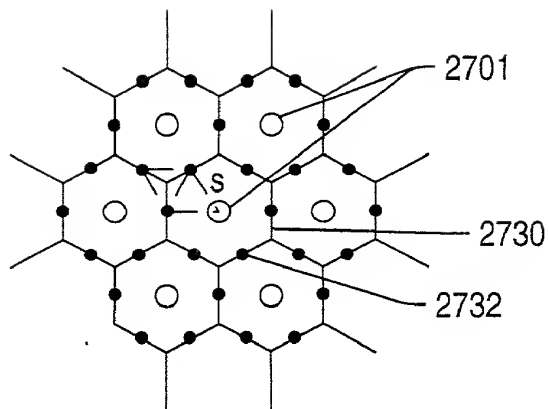


FIG. 62

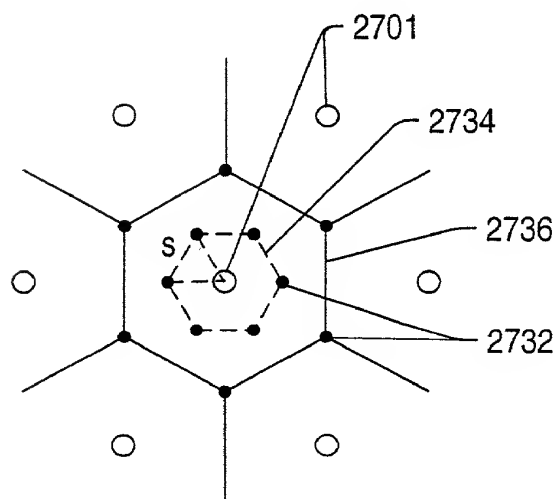


FIG. 63

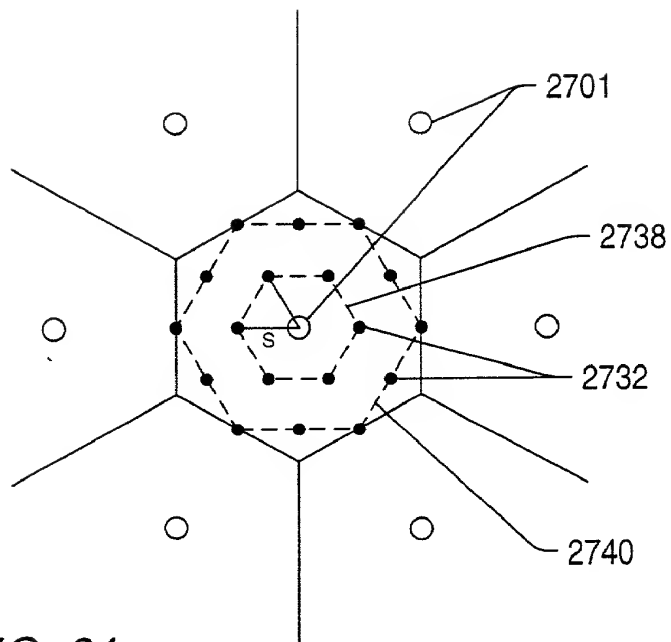


FIG. 64

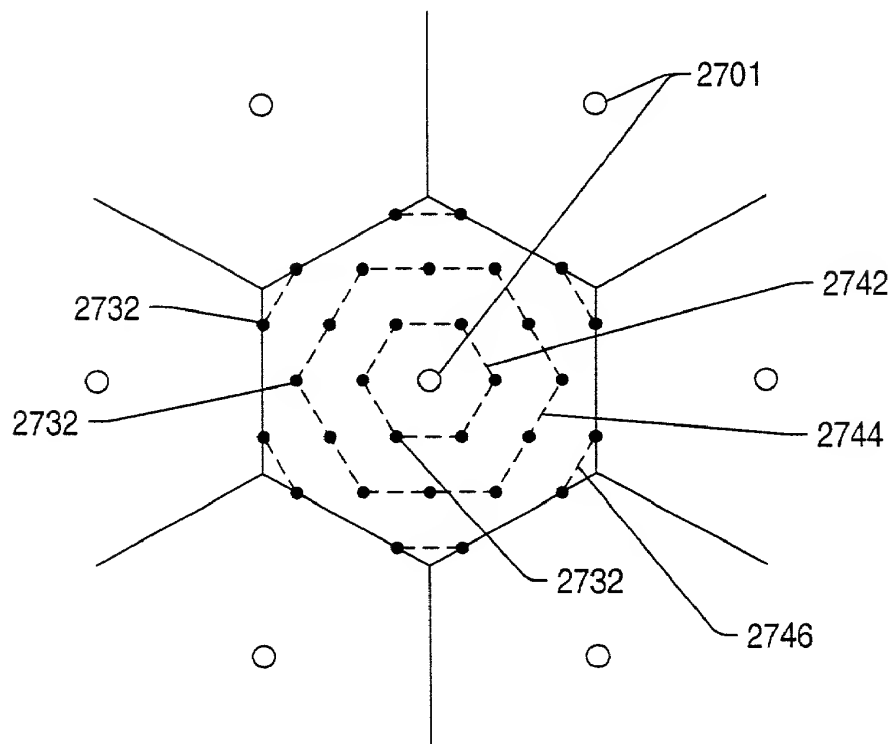


FIG. 65

FIG. 66 is a schematic diagram of a hexagonal lattice structure. The lattice is composed of solid black dots at the vertices of a hexagonal grid. A dashed line forms a triangle within the lattice, with its vertices labeled 'S'. The triangle is oriented with one vertex pointing upwards. The label 'S' is placed near each of the three vertices of the triangle. The lattice is bounded by lines extending from the vertices, suggesting a larger structure.

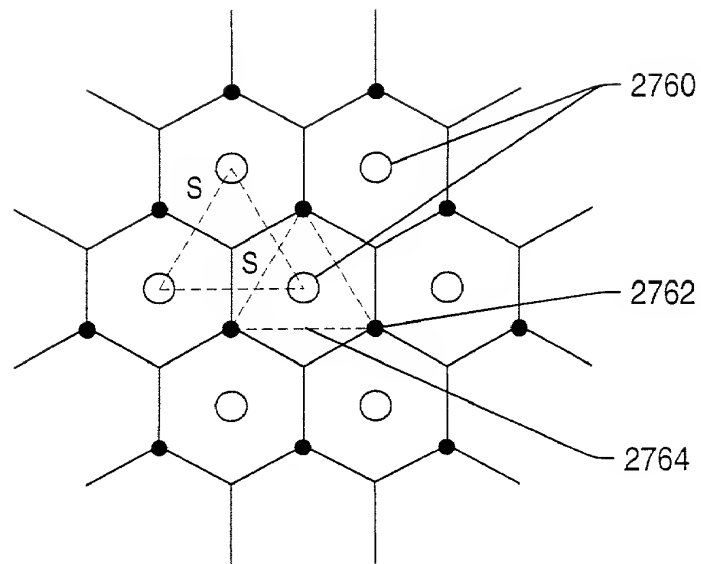


FIG. 66

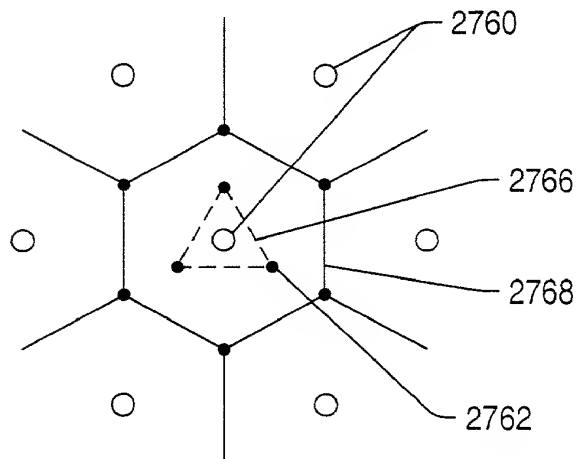


FIG. 67

FIG. 68 is a schematic diagram of a hexagonal unit cell of a crystal structure. The unit cell is defined by six vertices and six edges. The vertices are labeled 2760, 2772, 2770, 2762, 2774, and 2776. The edges are labeled 2762, 2770, 2772, 2774, 2776, and 2760. The unit cell is shown in a perspective view, with the front face being a hexagon and the back face being a smaller hexagon. The unit cell is part of a larger crystal structure, which is shown in a perspective view. The crystal structure is composed of many such unit cells, which are arranged in a regular, repeating pattern. The crystal structure is shown in a perspective view, with the front face being a hexagon and the back face being a smaller hexagon. The crystal structure is composed of many such unit cells, which are arranged in a regular, repeating pattern.

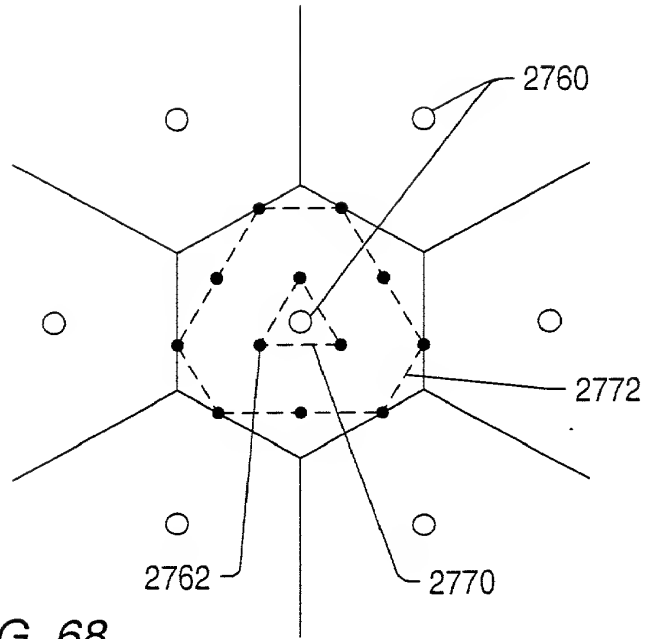


FIG. 68

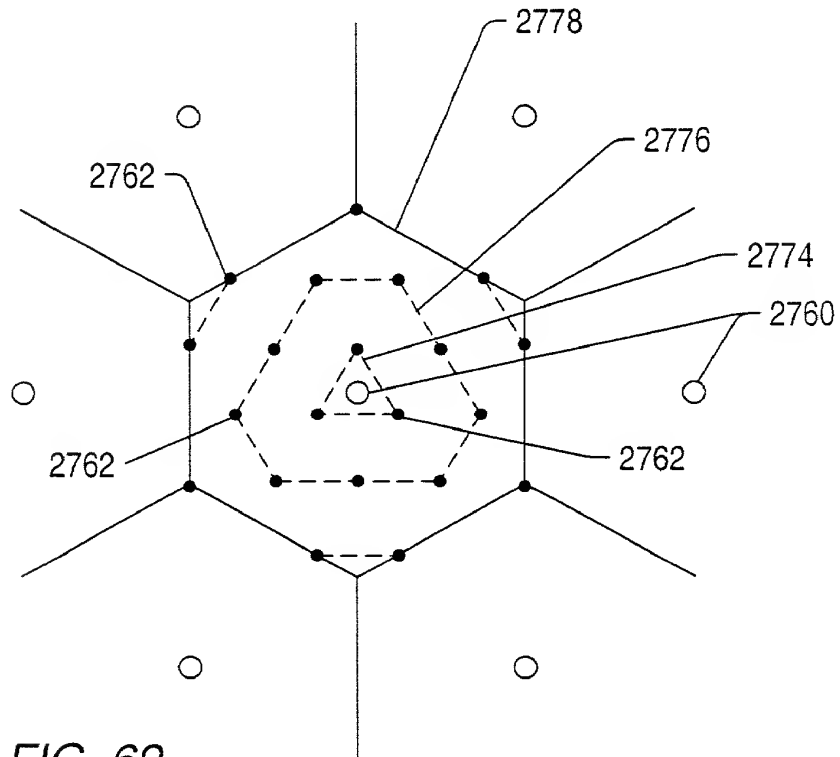


FIG. 69

FIG. 70

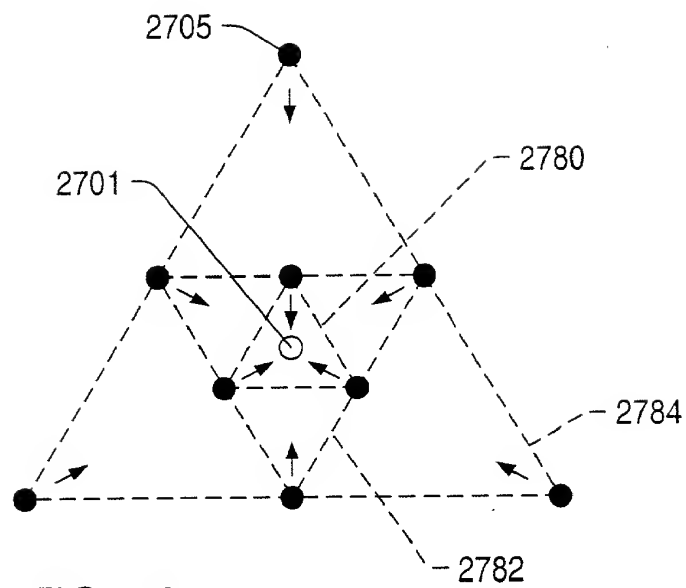


FIG. 70

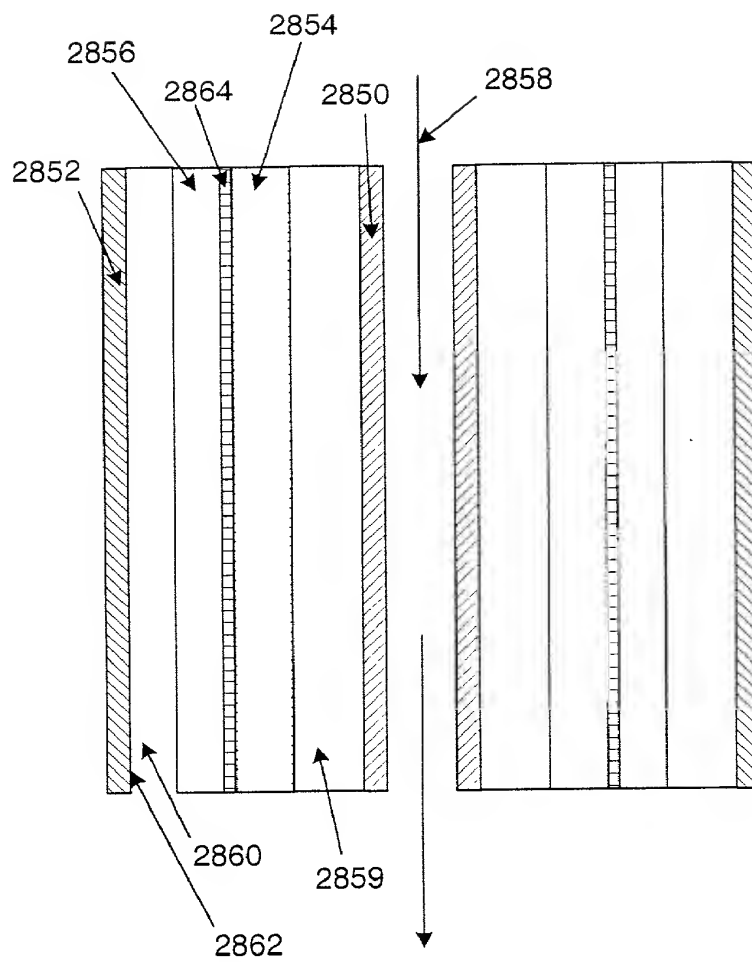


Fig. 72

FIG. 73 is a block diagram of a system 2800. The system 2800 includes a first processing unit 2900, a second processing unit 2906, a third processing unit 2930, and a fourth processing unit 2932. The first processing unit 2900 is connected to the second processing unit 2906 via a bus 2905. The second processing unit 2906 is connected to the third processing unit 2930 via a bus 2907. The third processing unit 2930 is connected to the fourth processing unit 2932 via a bus 2932. The first processing unit 2900 is also connected to a first input/output unit 2902 and a first output unit 2903. The second processing unit 2906 is connected to a second input/output unit 2904. The third processing unit 2930 is connected to a third input/output unit 2910, a third input/output unit 2914, a third input/output unit 2918, a third input/output unit 2922, and a third input/output unit 2926. The fourth processing unit 2932 is connected to a fourth input/output unit 2912, a fourth input/output unit 2916, a fourth input/output unit 2920, a fourth input/output unit 2924, and a fourth input/output unit 2928.

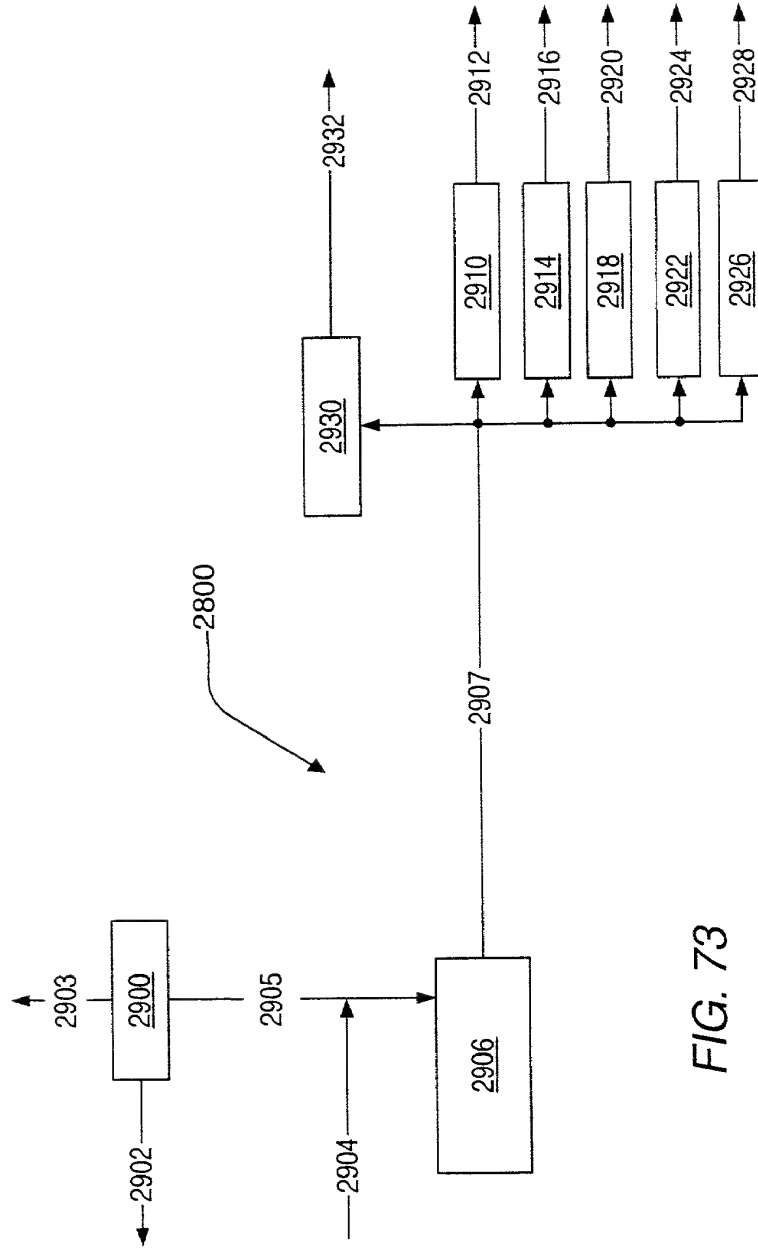


FIG. 73

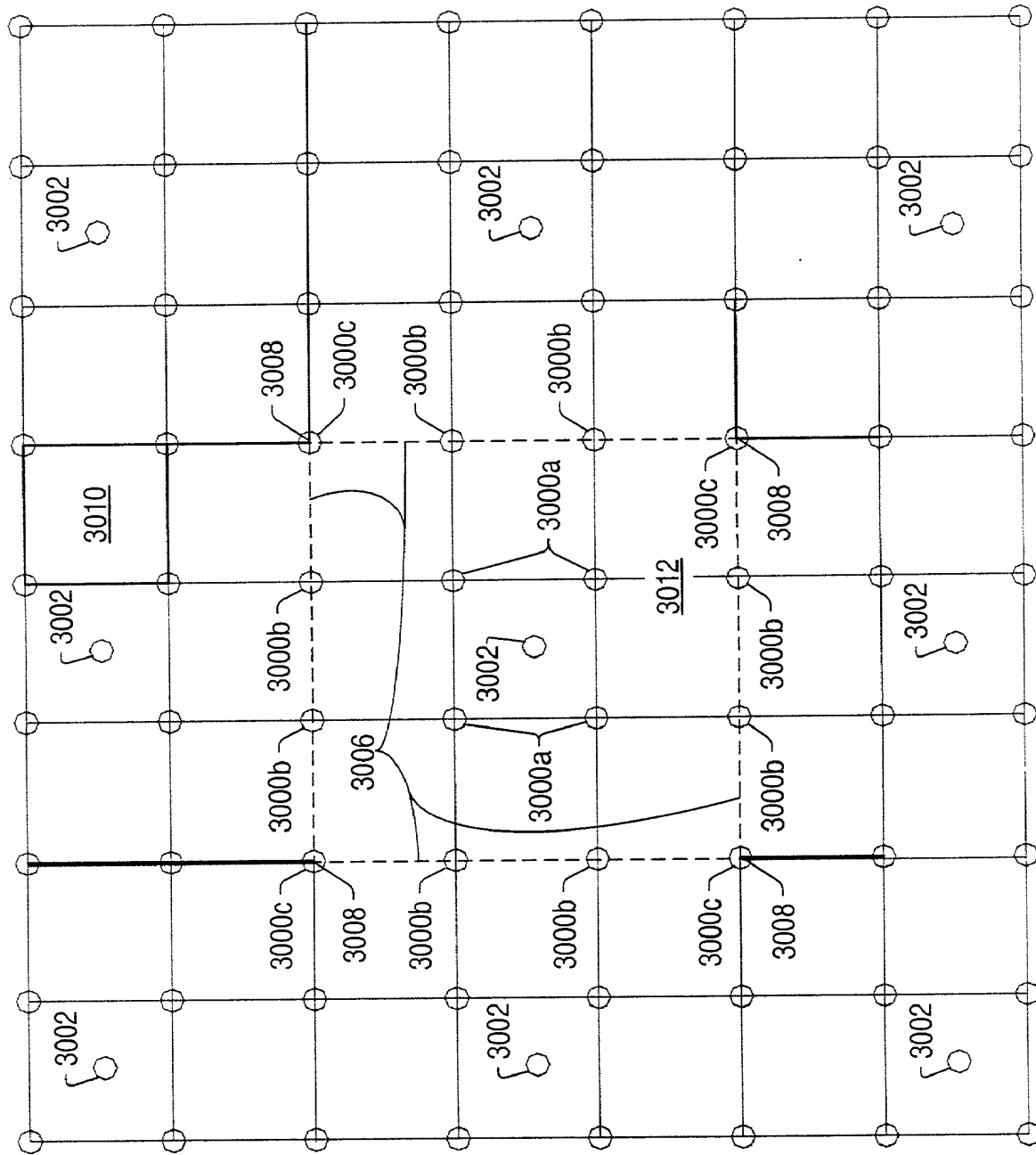


FIG. 74

FIG. 75 is a schematic diagram of a hexagonal lattice structure. The lattice is composed of hexagonal cells. A central hexagonal cell is labeled 3000. It is surrounded by six other hexagonal cells, each labeled 3002. These six cells are further surrounded by a ring of twelve hexagonal cells, each labeled 3006. The outermost ring consists of twelve hexagonal cells, each labeled 3008. The diagram illustrates a hierarchical structure where the central cell 3000 is connected to the inner ring of cells 3002, which are in turn connected to the middle ring of cells 3006, and finally to the outer ring of cells 3008. The connections are shown as solid lines between adjacent cells. Dashed lines are used to highlight specific connections or paths, such as the path from cell 3000 to the cell 3002 directly below it, and the path from cell 3002 to the cell 3006 directly below it, and the path from cell 3006 to the cell 3008 directly below it. The label 3014 is also present, pointing to a specific cell in the middle ring.

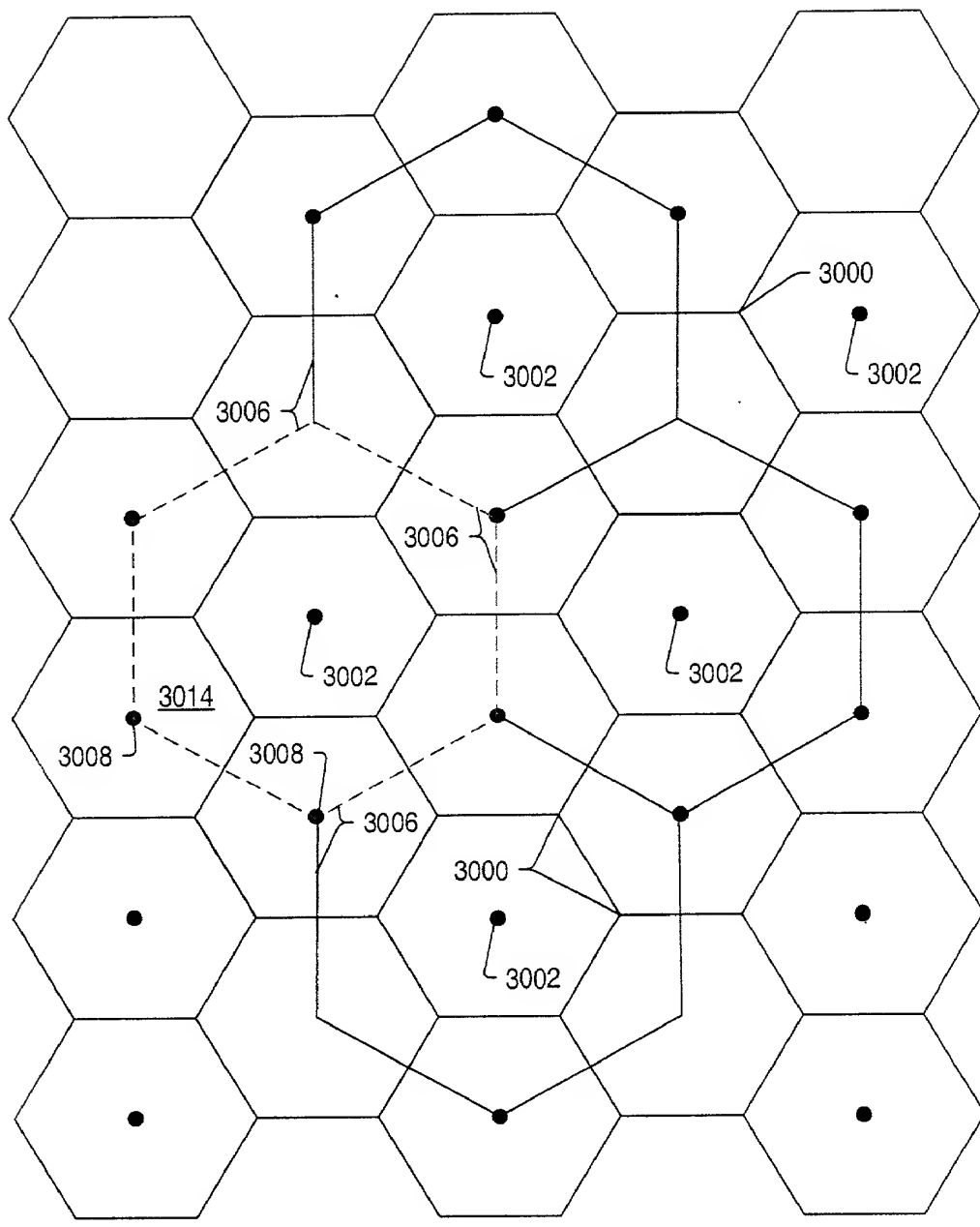


FIG. 75

FIG. 76 is a schematic diagram of a hexagonal lattice structure. The lattice is composed of a central hexagon surrounded by six other hexagons, forming a larger hexagonal shape. The vertices of the lattice are marked with black dots. The edges of the lattice are labeled with reference numerals: 3100 for the outermost edges, 3102 for the edges of the central hexagon, 3116 for the edges of the hexagons immediately surrounding the center, and 3118 for the edges of the hexagons further out. The diagram illustrates the connectivity and geometry of the hexagonal lattice.

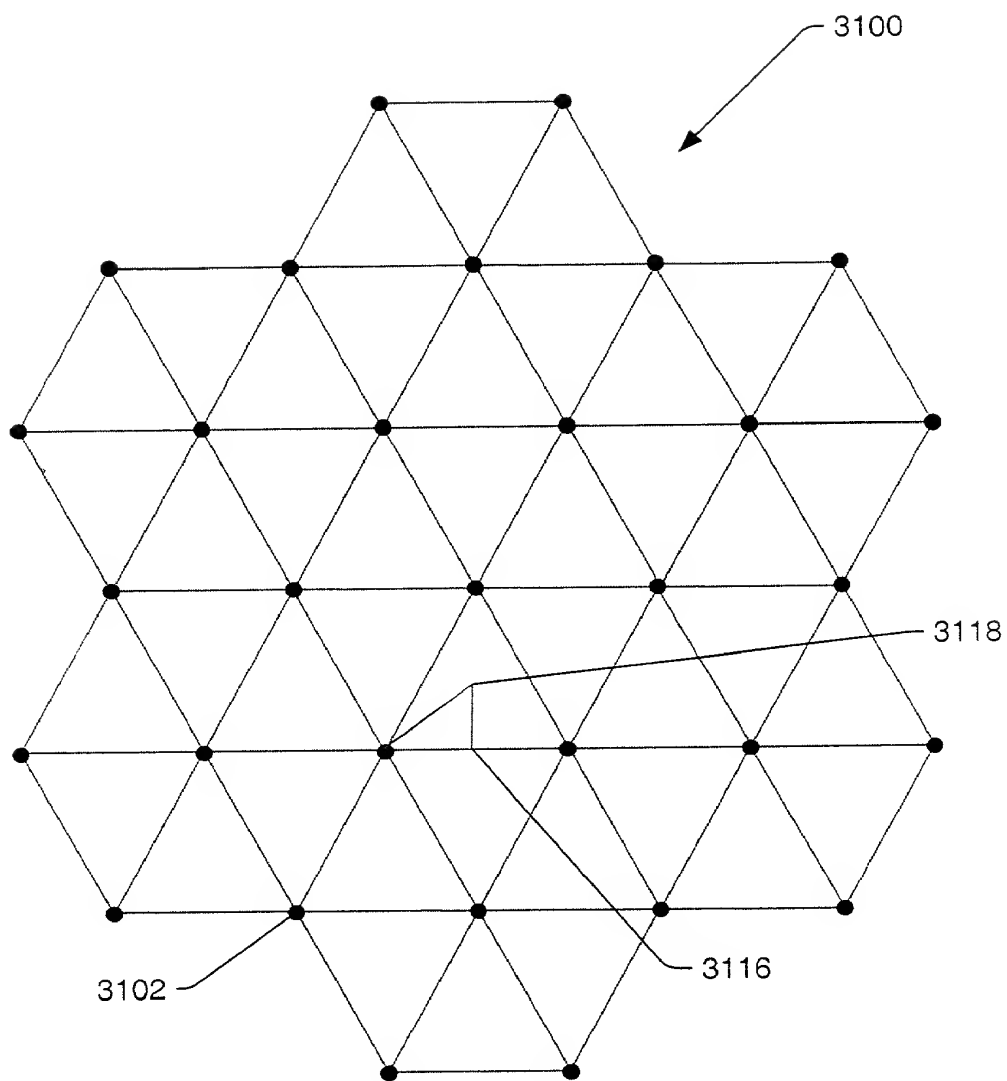


FIG. 76

FIG. 76a is a schematic diagram of a grid structure 3101. The grid structure 3101 includes a grid of nodes 3103 and a grid of lines 3105. The grid of nodes 3103 includes a first node 3107, a second node 3109, a third node 3111, a fourth node 3113, a fifth node 3115, a sixth node 3117, a seventh node 3119, and an eighth node 3121. The grid of lines 3105 includes a first line 3123, a second line 3125, a third line 3127, a fourth line 3129, a fifth line 3131, a sixth line 3133, a seventh line 3135, and an eighth line 3137. The grid structure 3101 is configured to provide a grid of nodes 3103 and a grid of lines 3105.

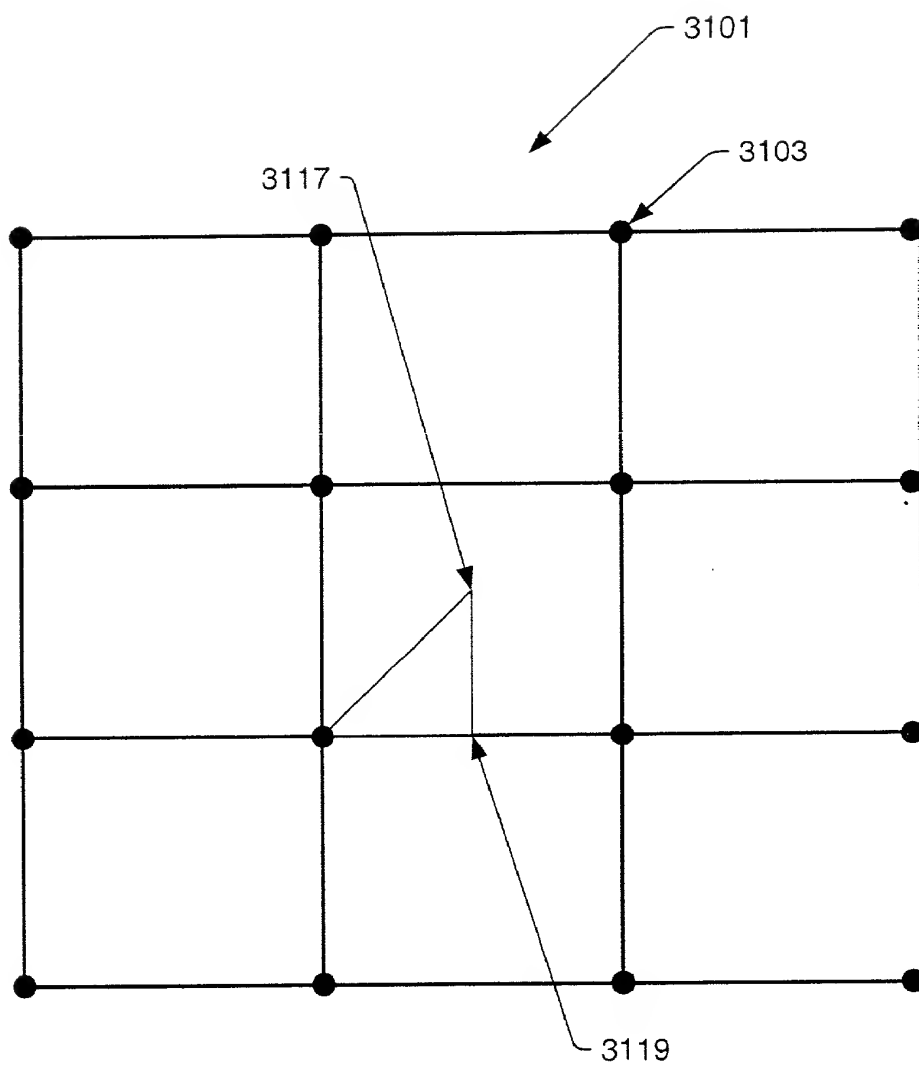


FIG. 76a

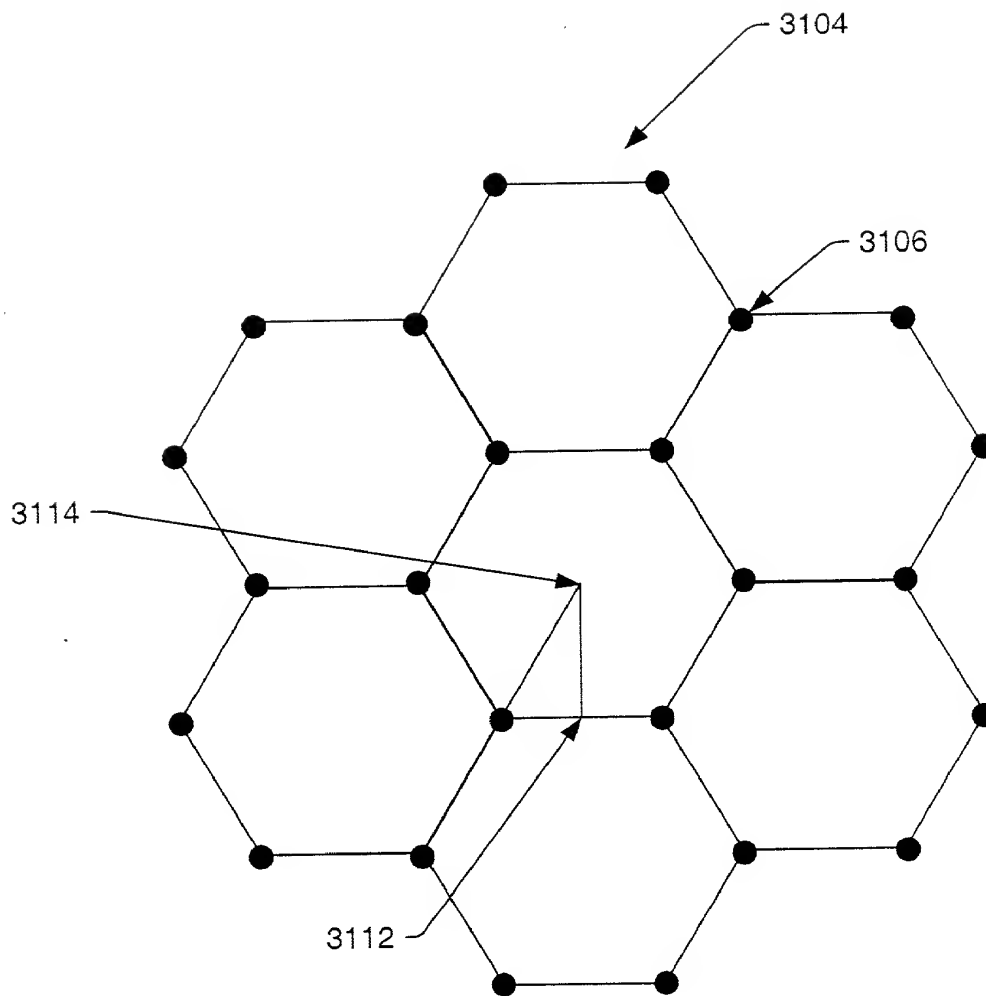


FIG. 77

FIG. 77a is a schematic diagram of a hexagonal lattice structure. The lattice is composed of a central hexagon surrounded by six other hexagons, forming a larger hexagonal shape. The vertices of the hexagons are marked with black dots. The edges of the hexagons are marked with lines. The label 3115 points to the central hexagon. The label 3105 points to the top-right hexagon. The label 3107 points to the top-right edge of the top-right hexagon.

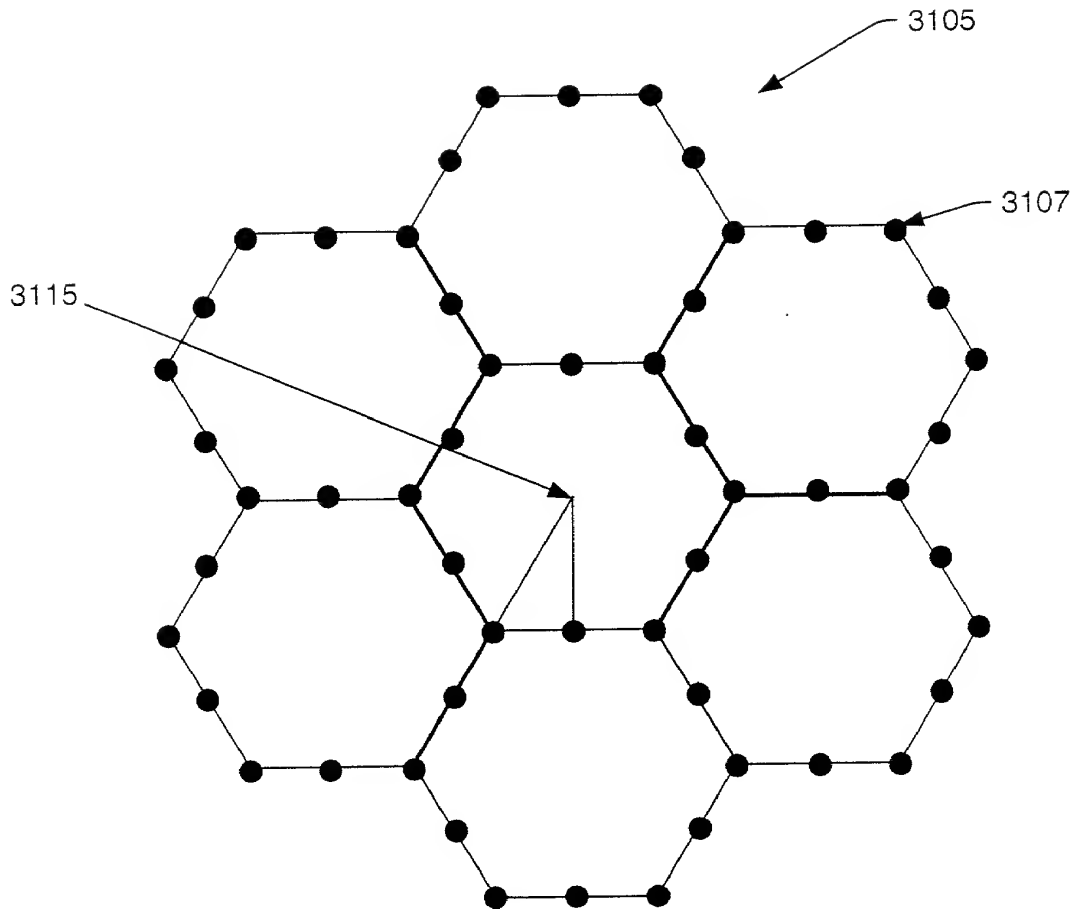


FIG. 77a

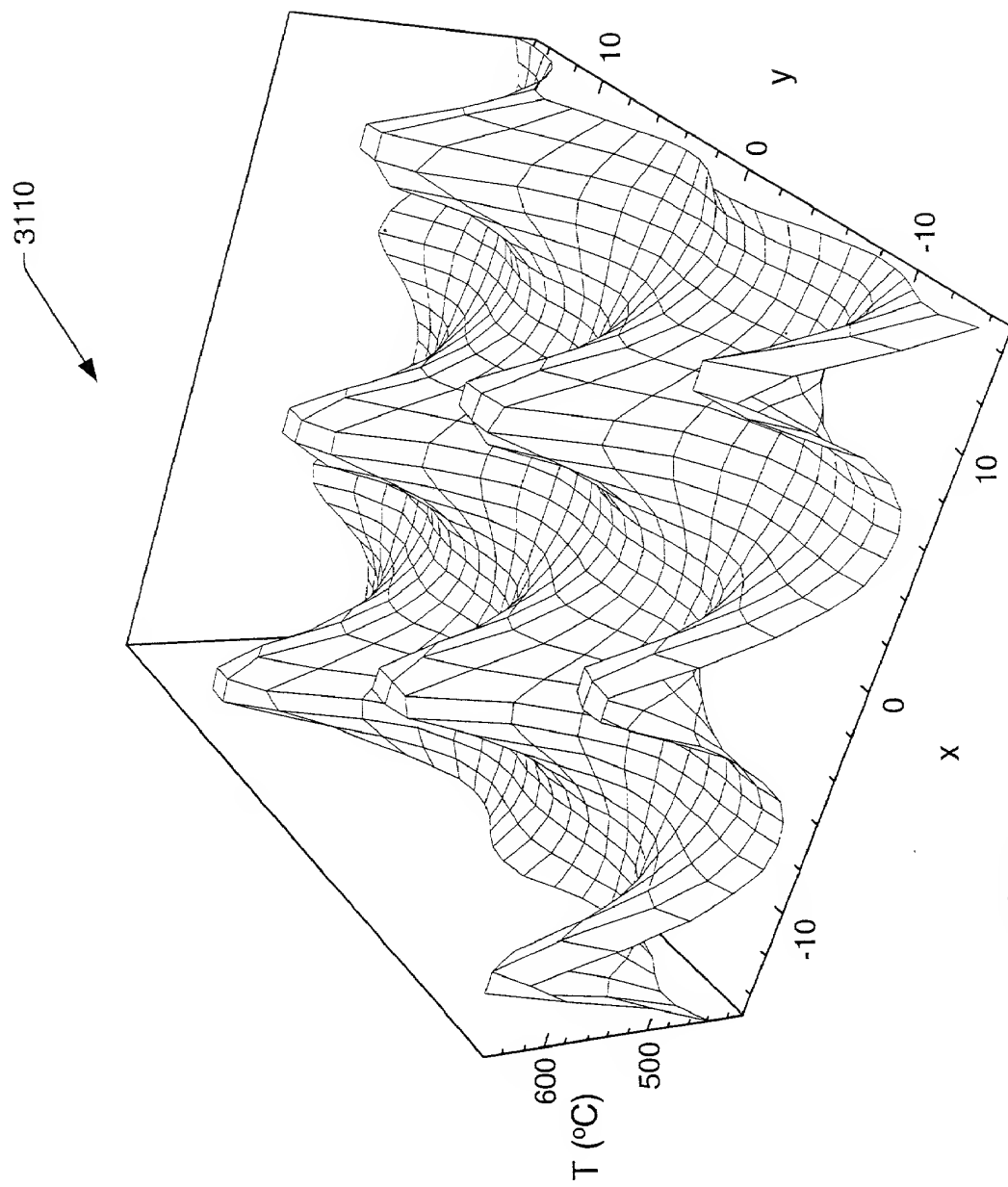


FIG. 78

3108

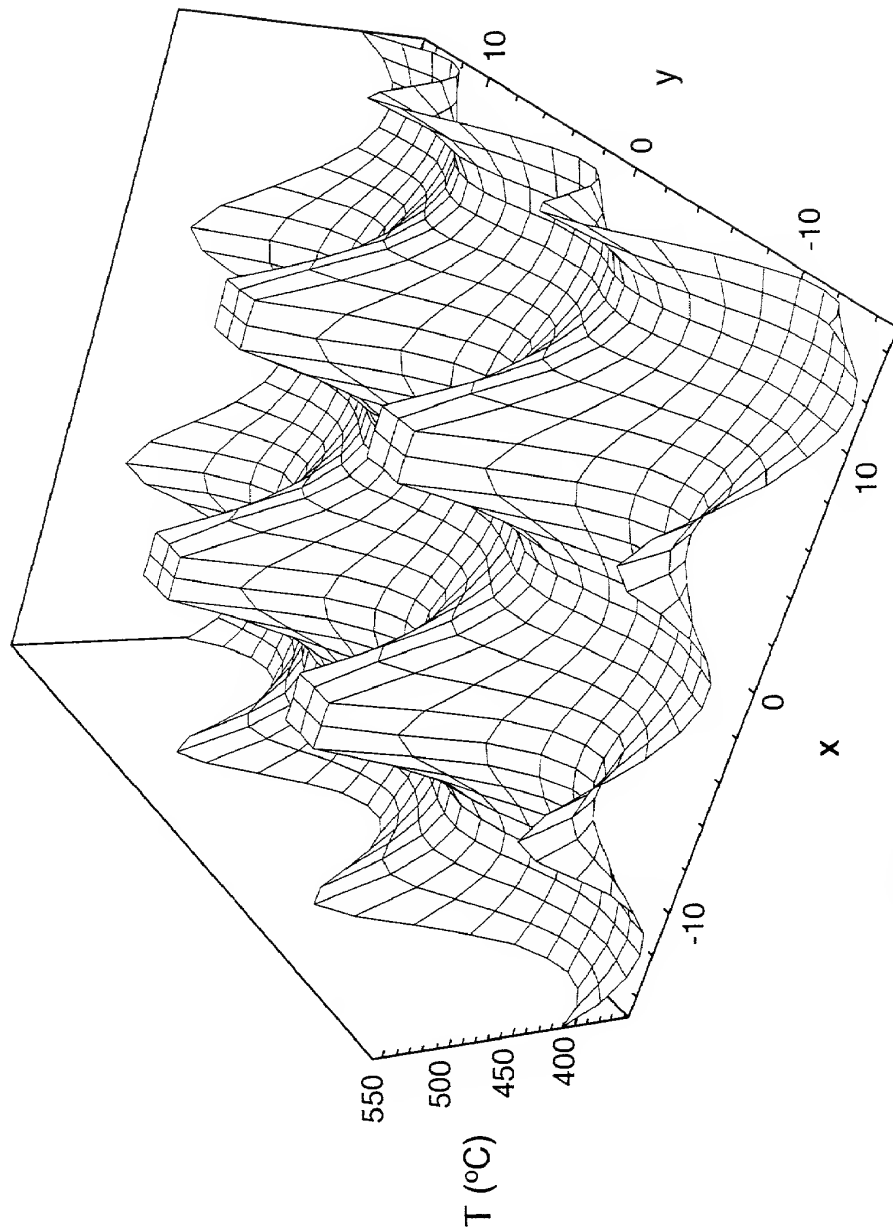


FIG. 79

3109

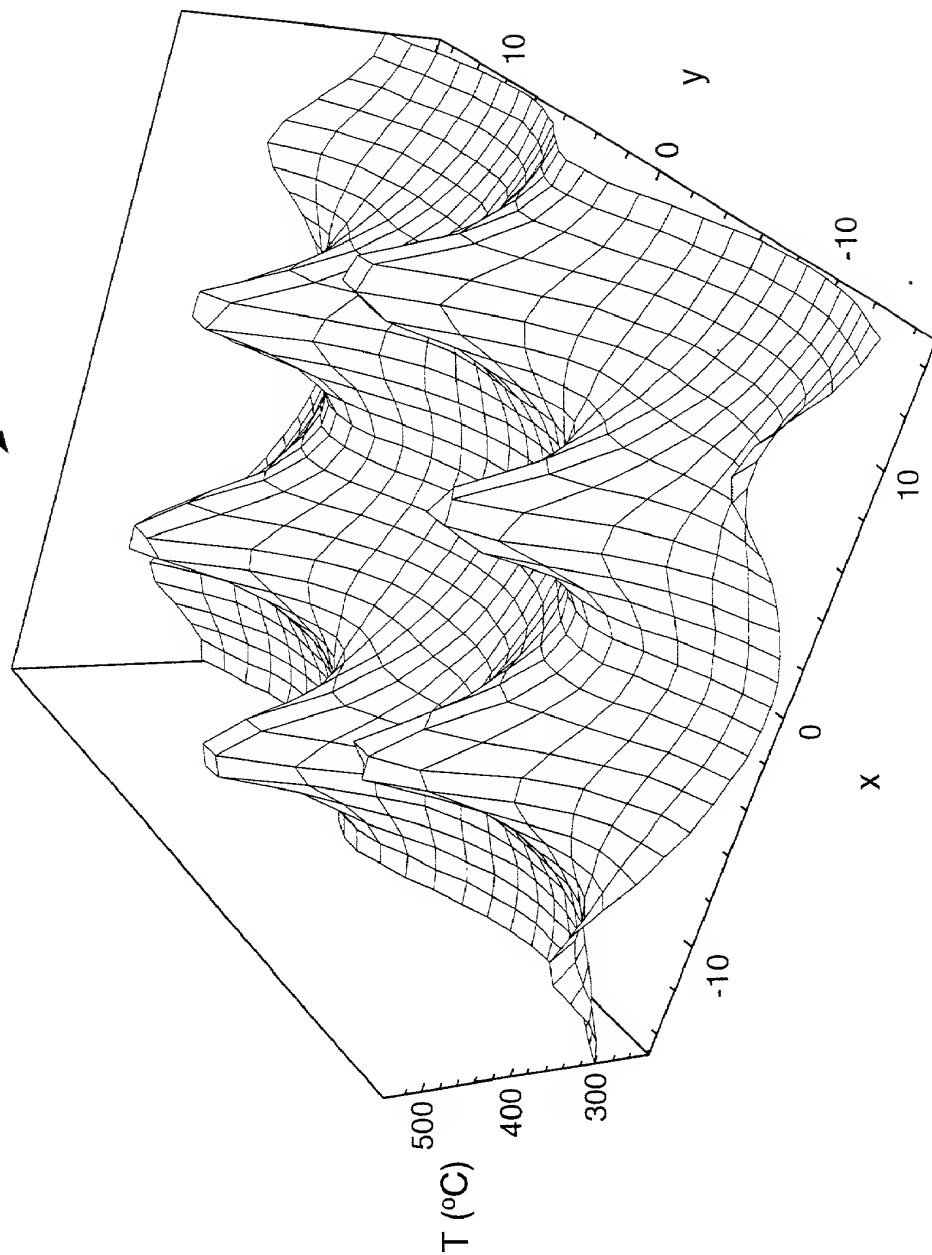


FIG. 79a

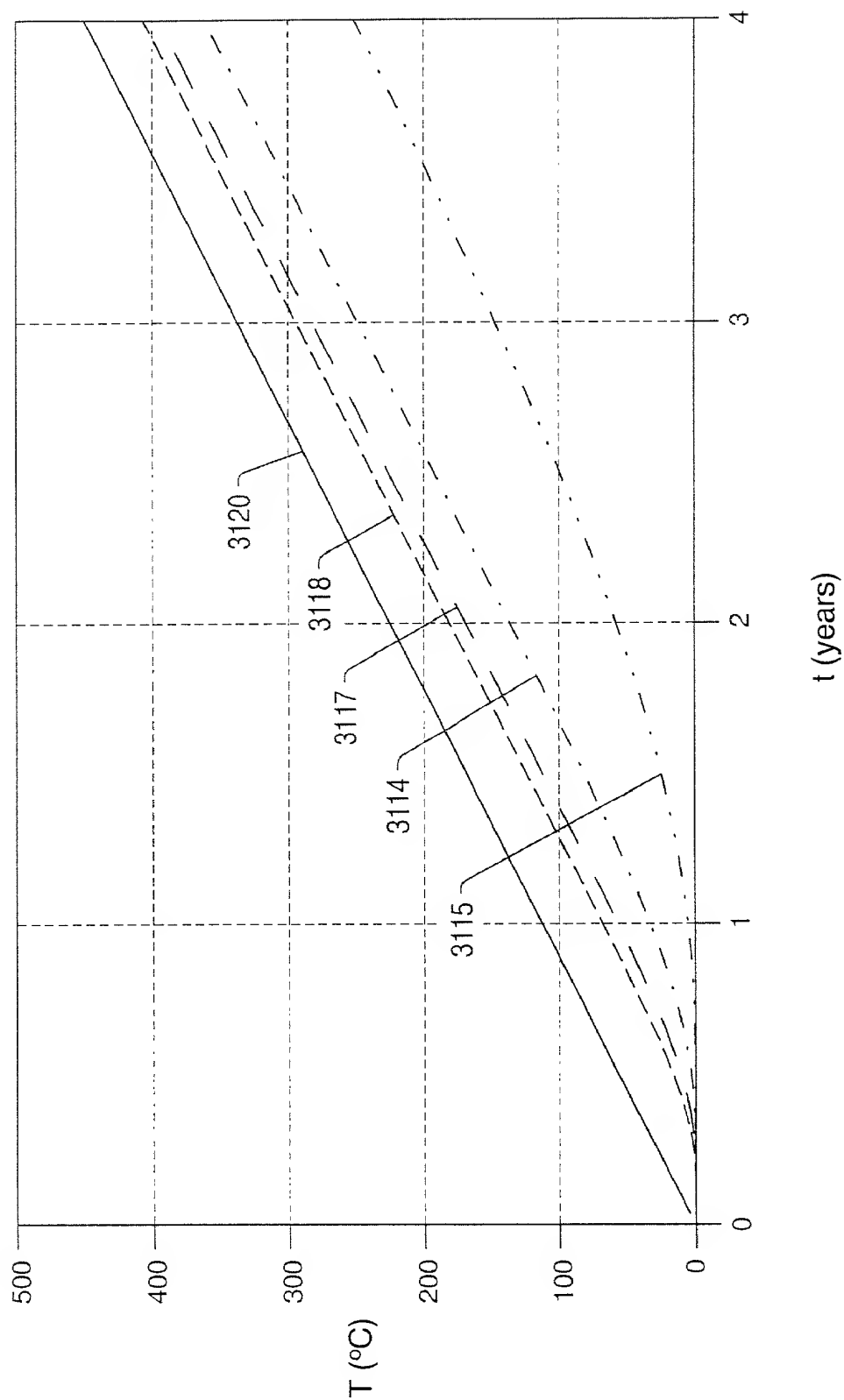


FIG. 80

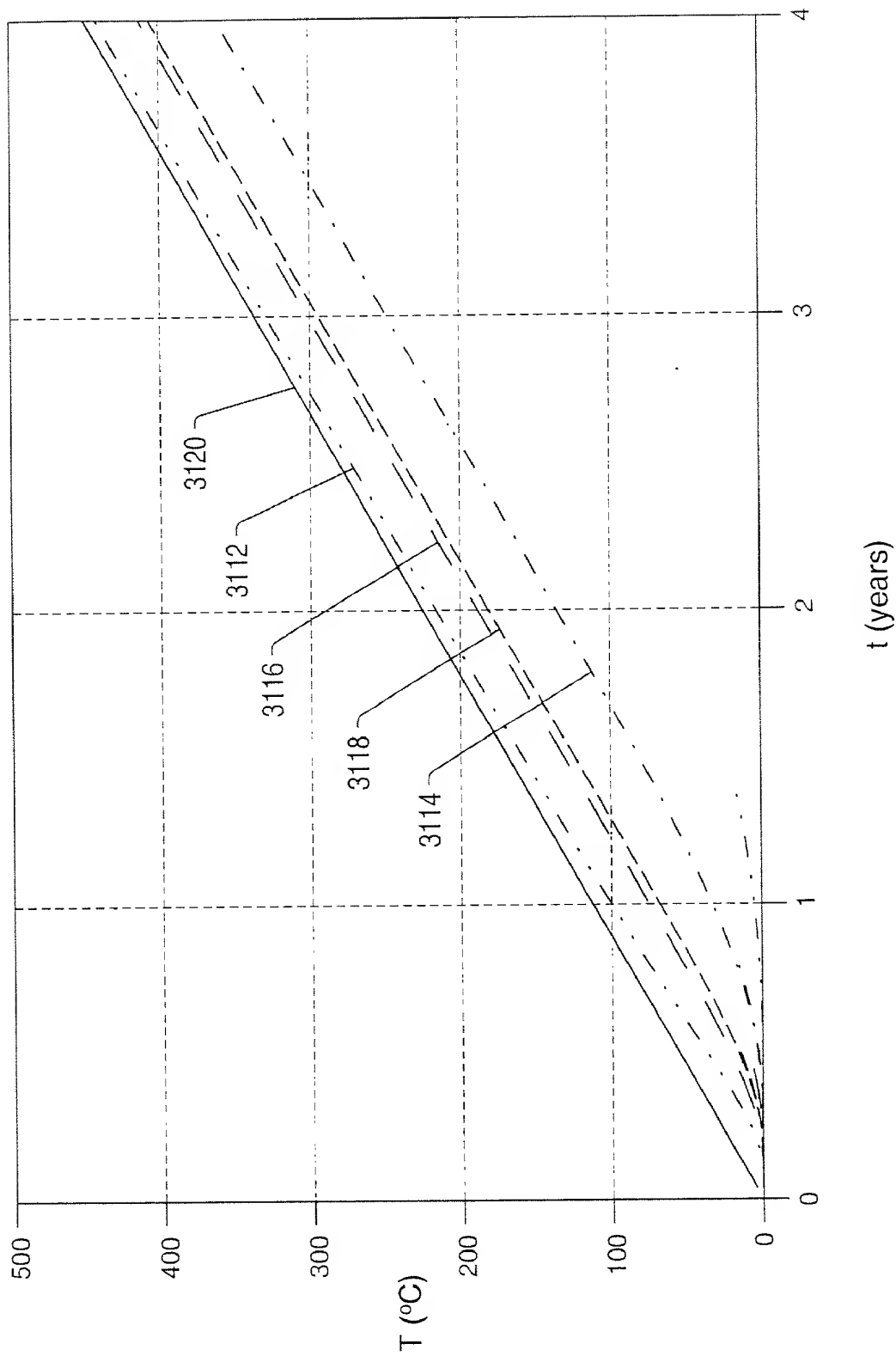


FIG. 81

FIG. 81a

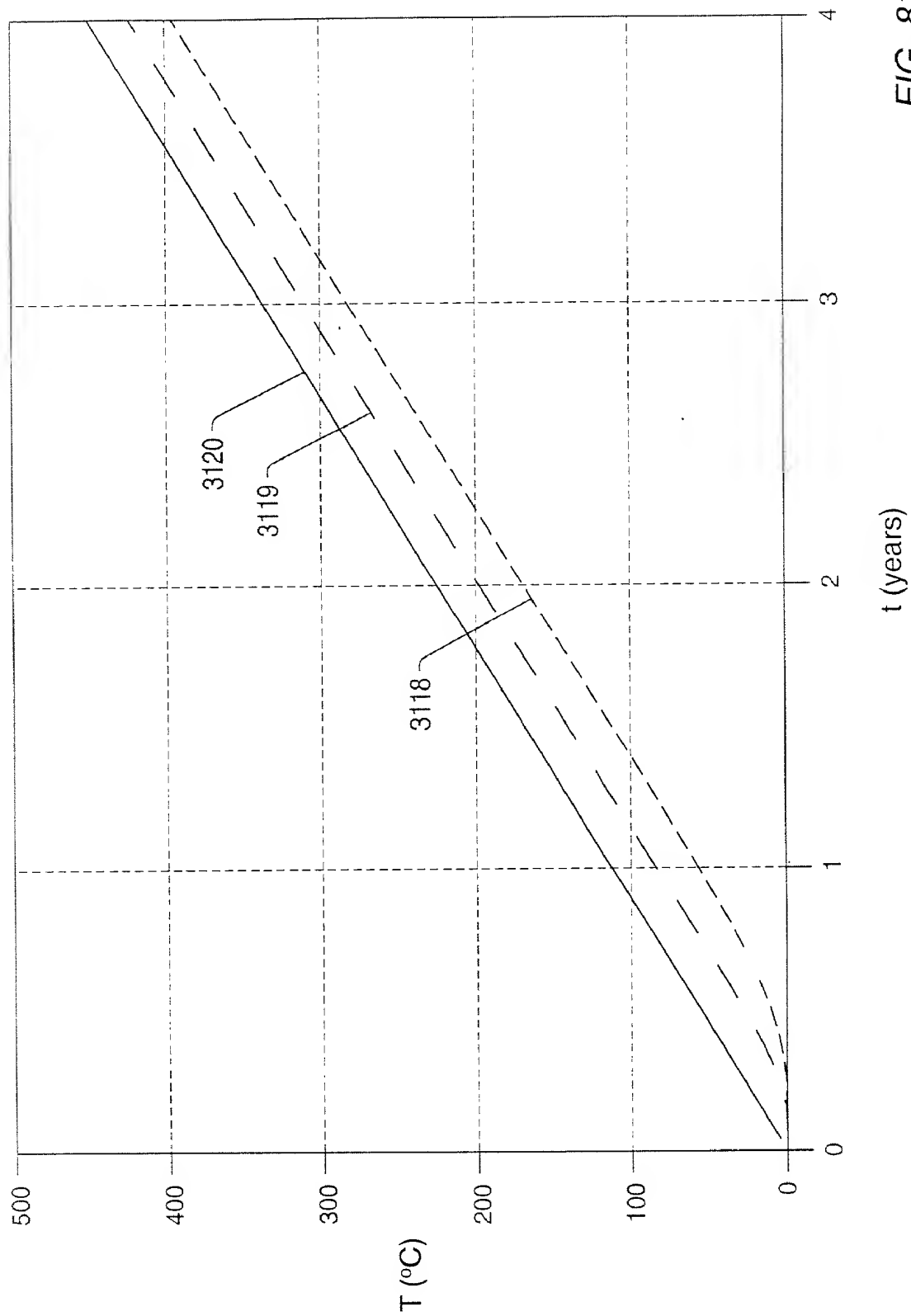


FIG. 81a

FIG. 81b is a graph showing the temperature T (°C) versus time t (years) for a system. The graph includes several curves labeled 3114, 3117, 3118, and 3120, which represent different thermal profiles over time.

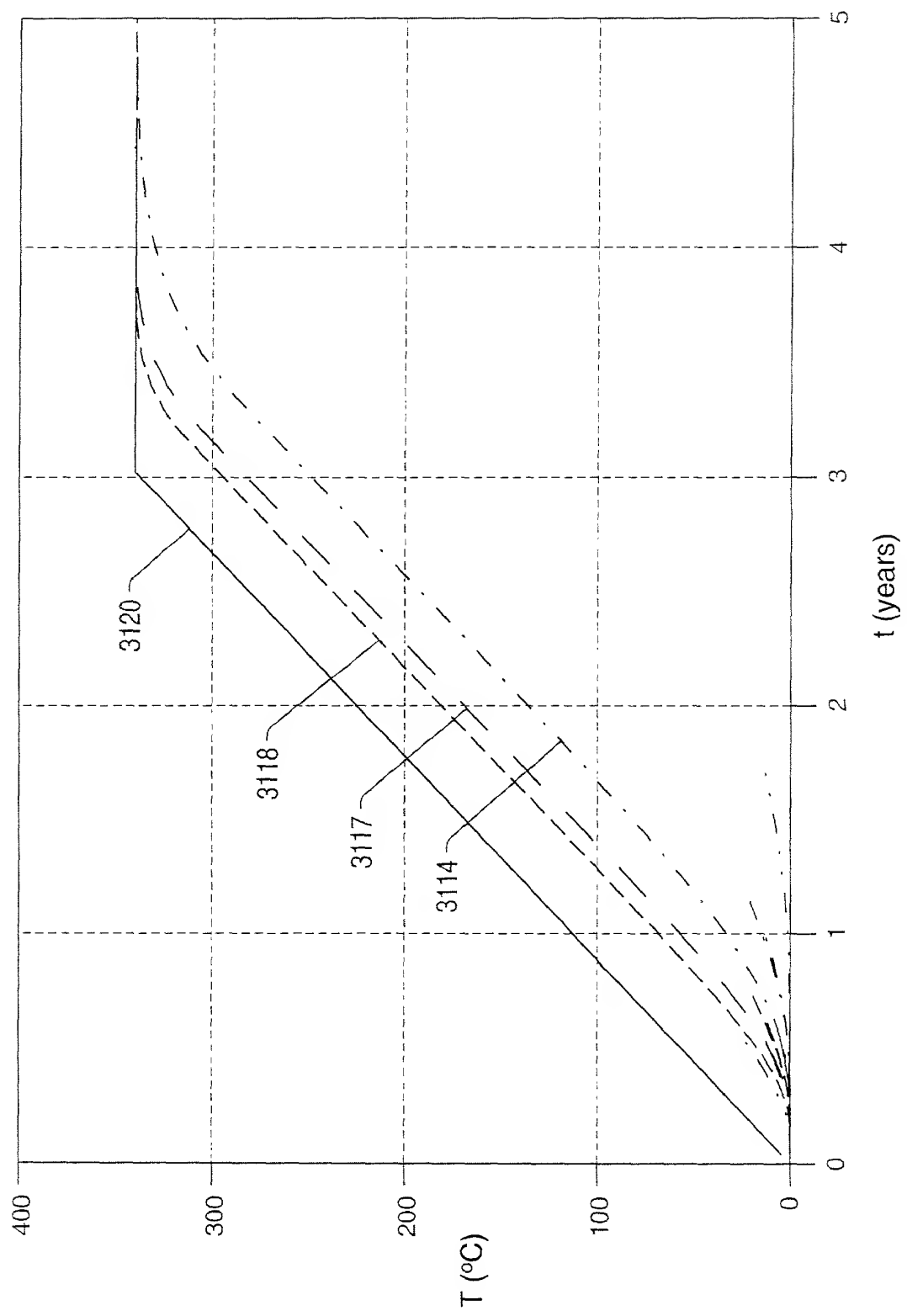


FIG. 81b

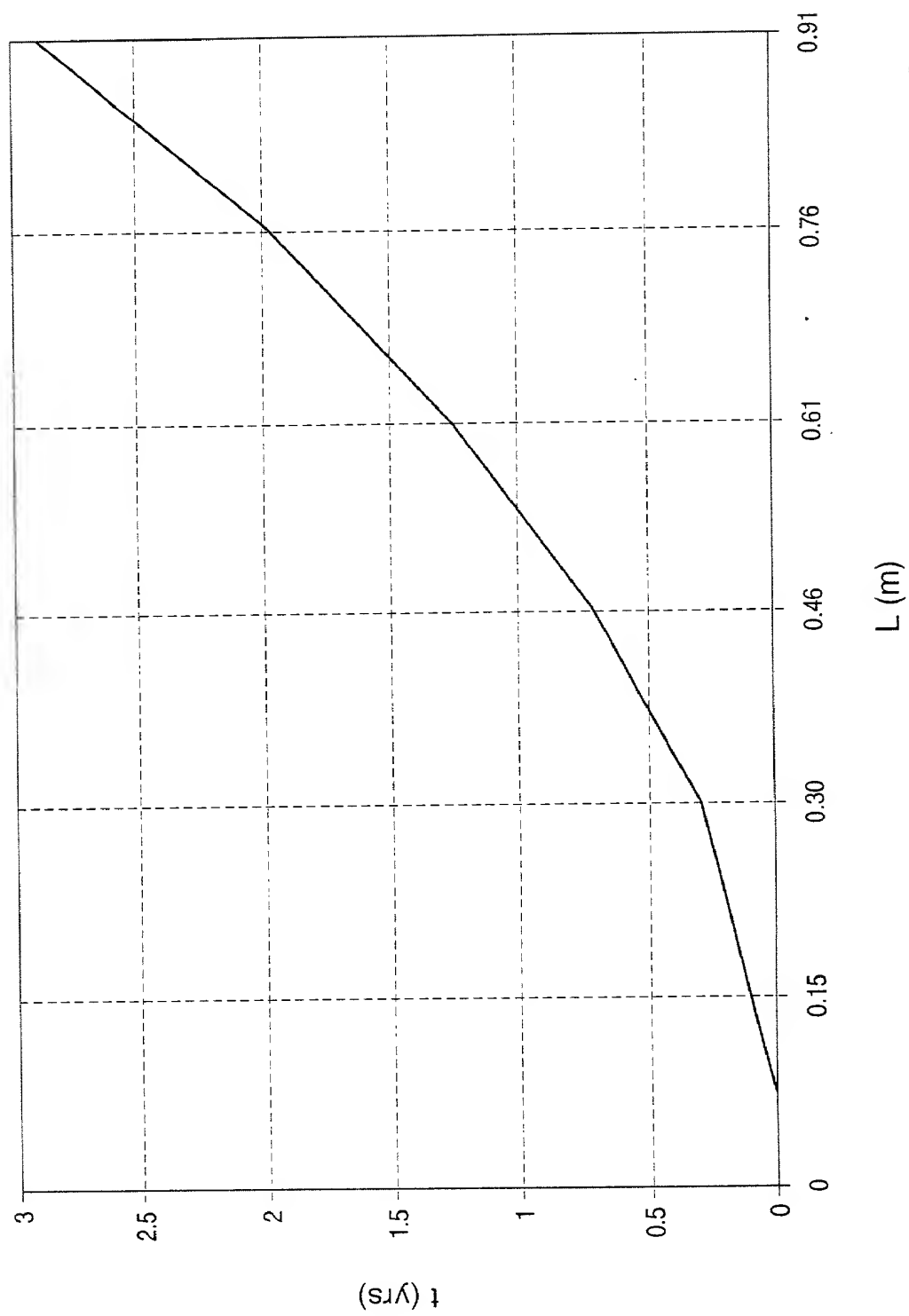


FIG. 82

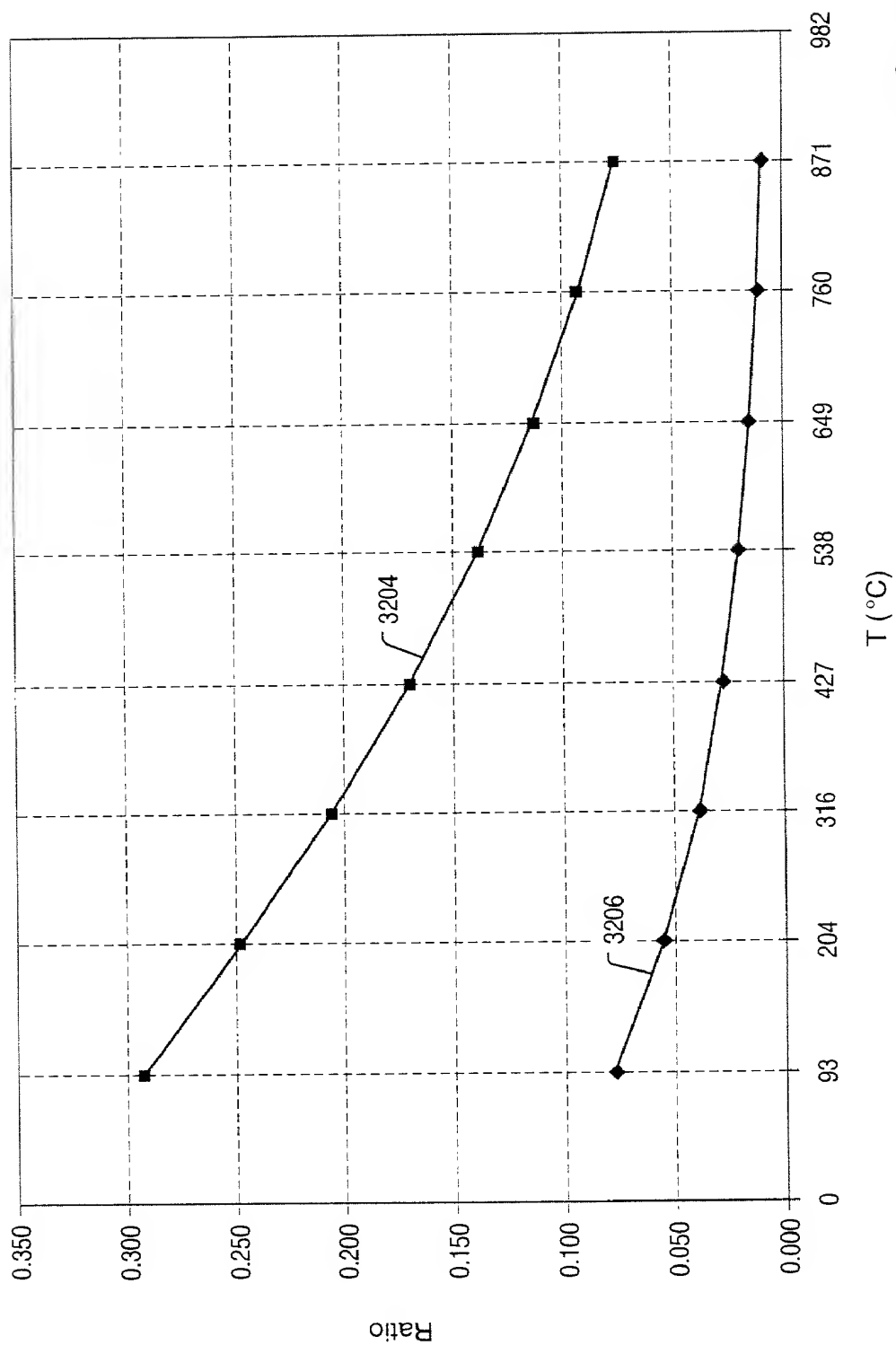


FIG. 83

1000 900 800 700 600 500 400 300 200 100 0

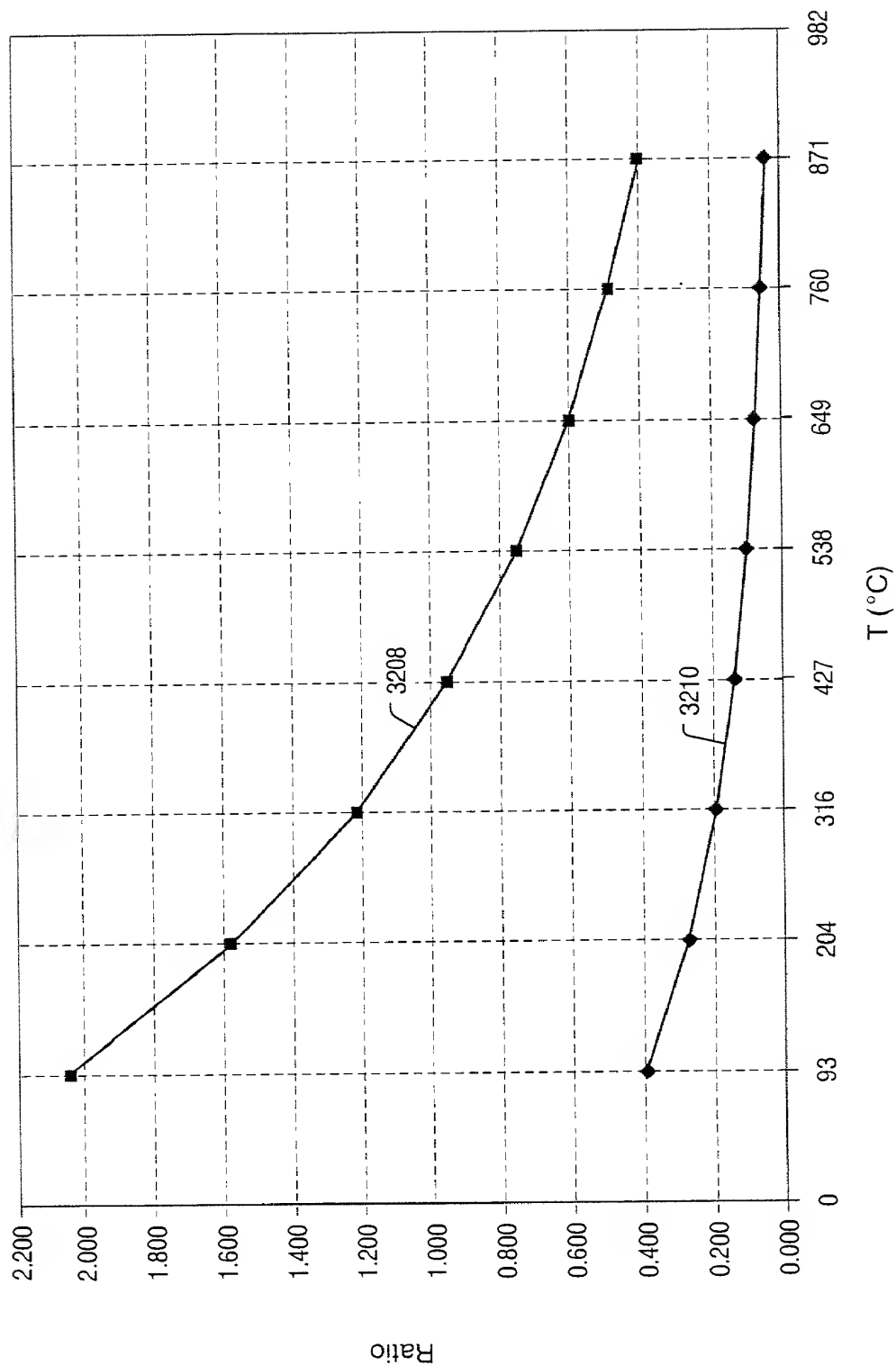


FIG. 84

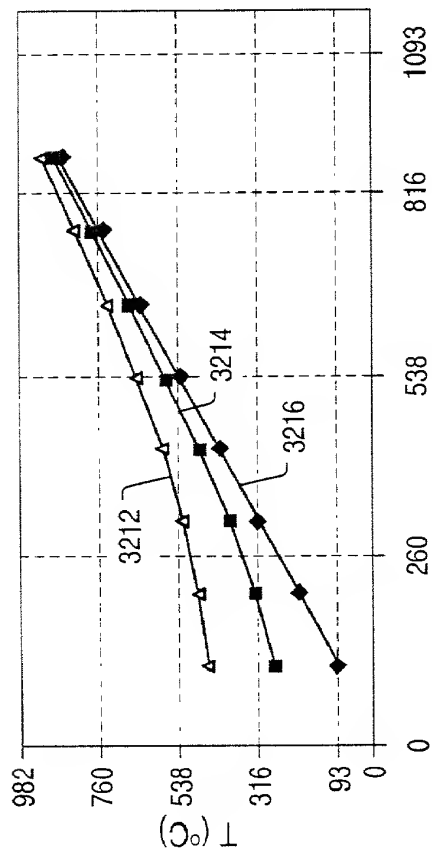


FIG. 85

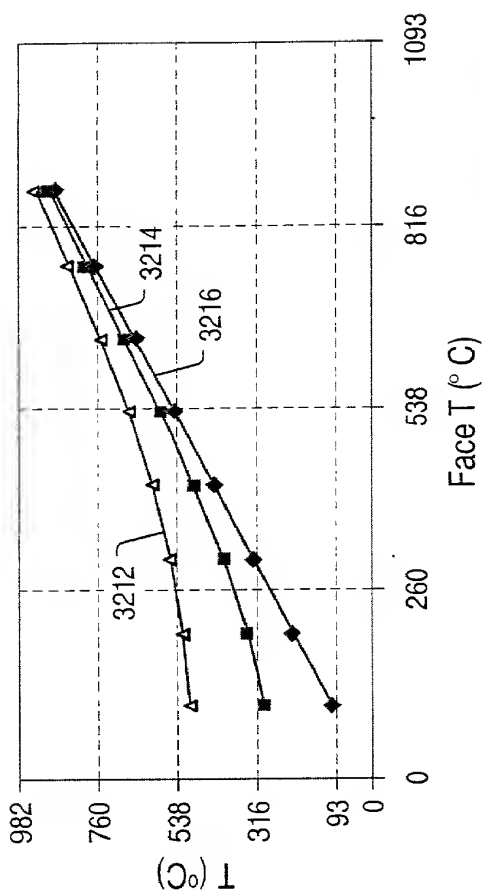


FIG. 86

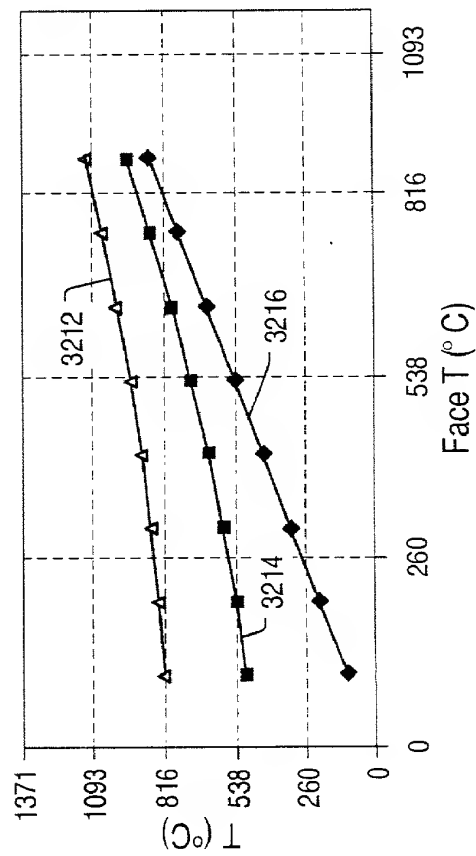


FIG. 87

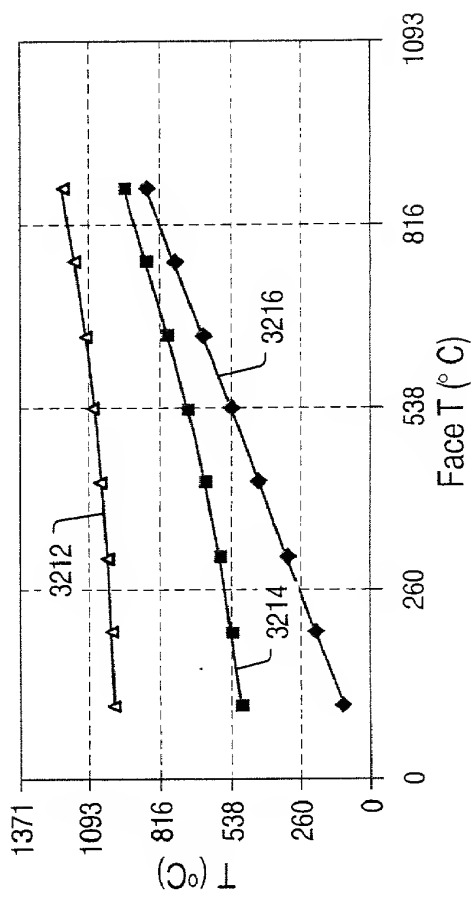


FIG. 88

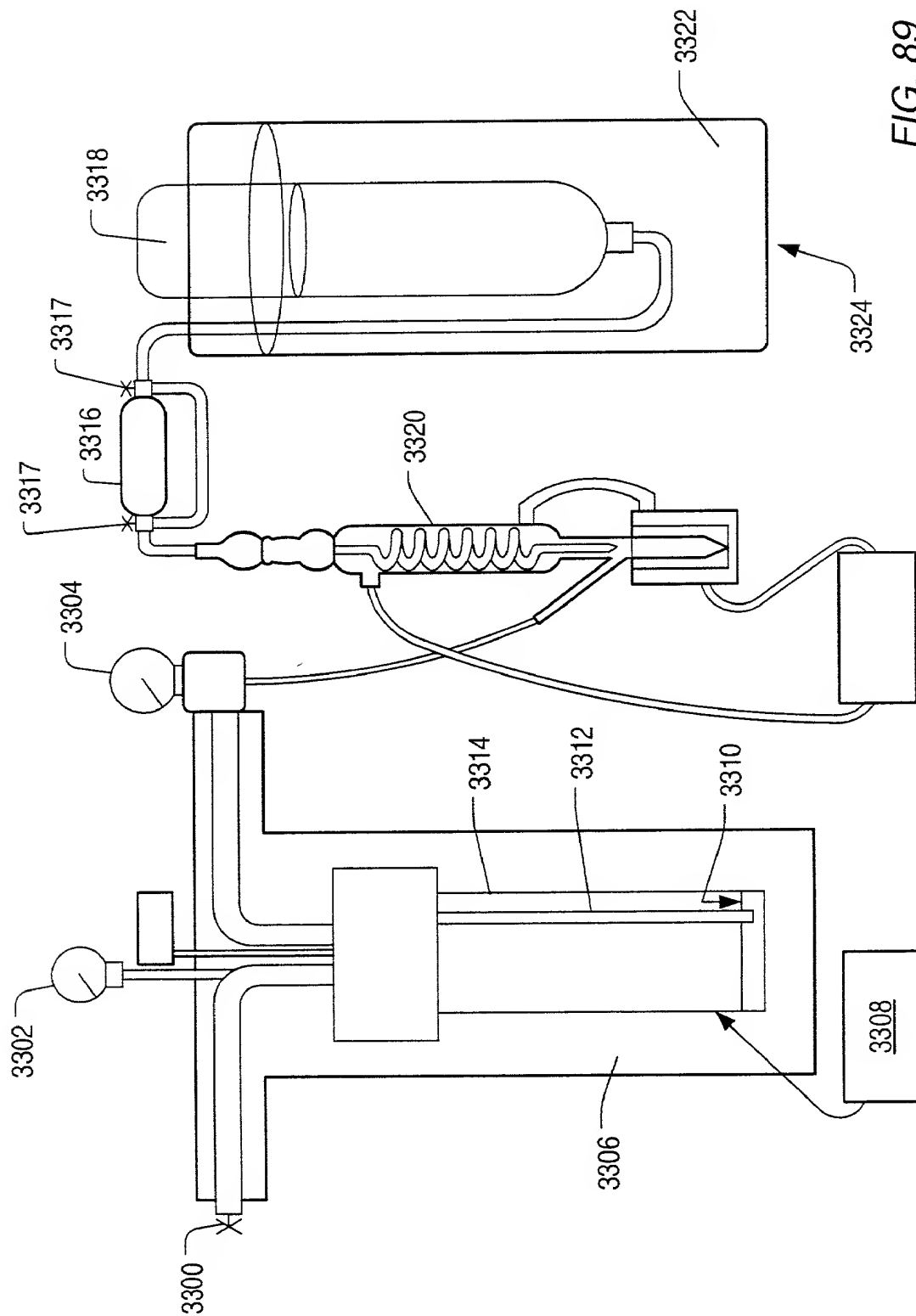


FIG. 89

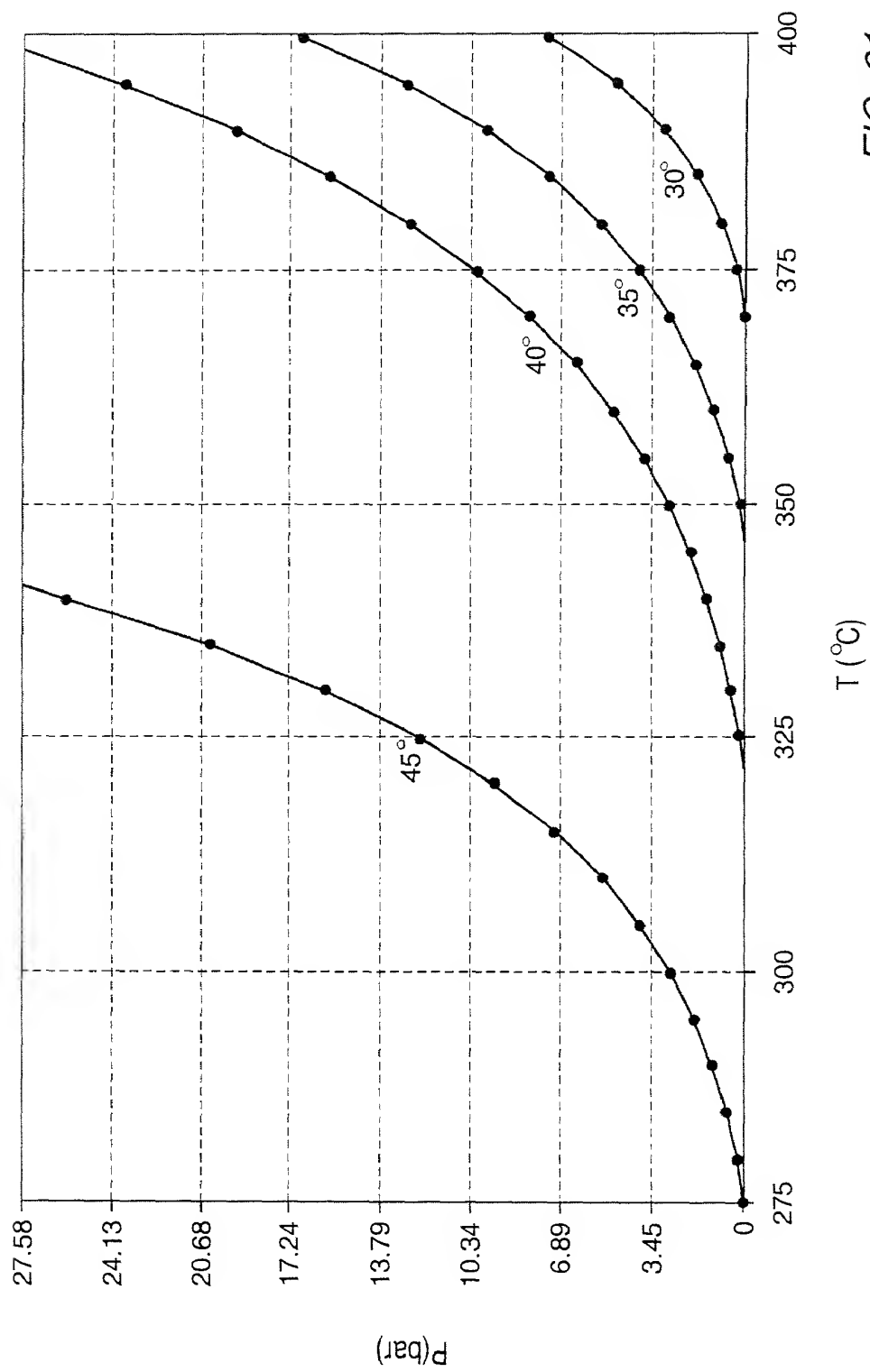
[illegible]

Figure 92 is a graph showing the relationship between pressure (P) in bar and temperature (T) in degrees Celsius for three different conditions: 0.01, 0.05, and 0.1. The graph shows that as temperature increases, the pressure also increases for all three conditions. The pressure values are higher for the 0.1 condition than for the 0.05 and 0.01 conditions.

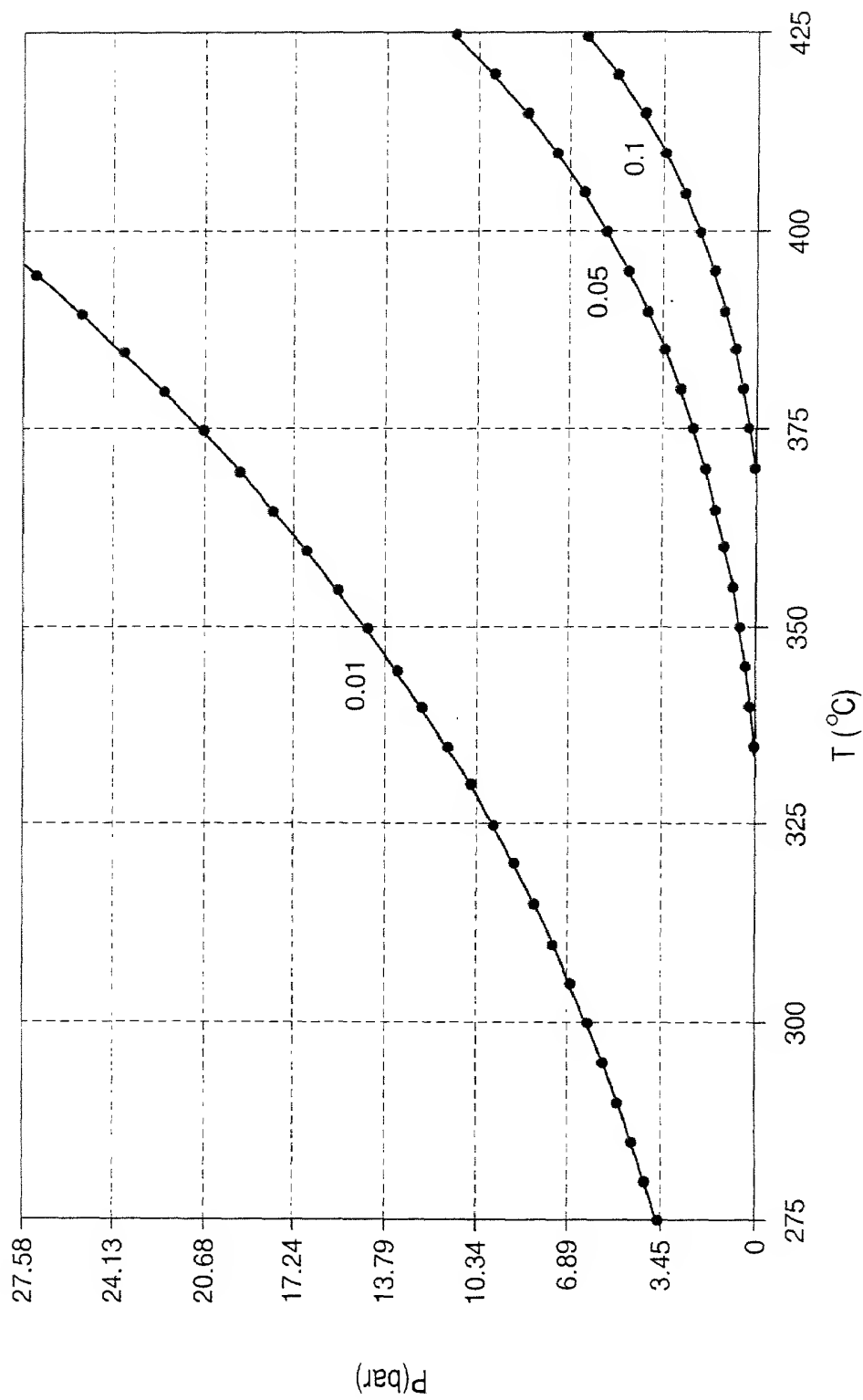


FIG. 92

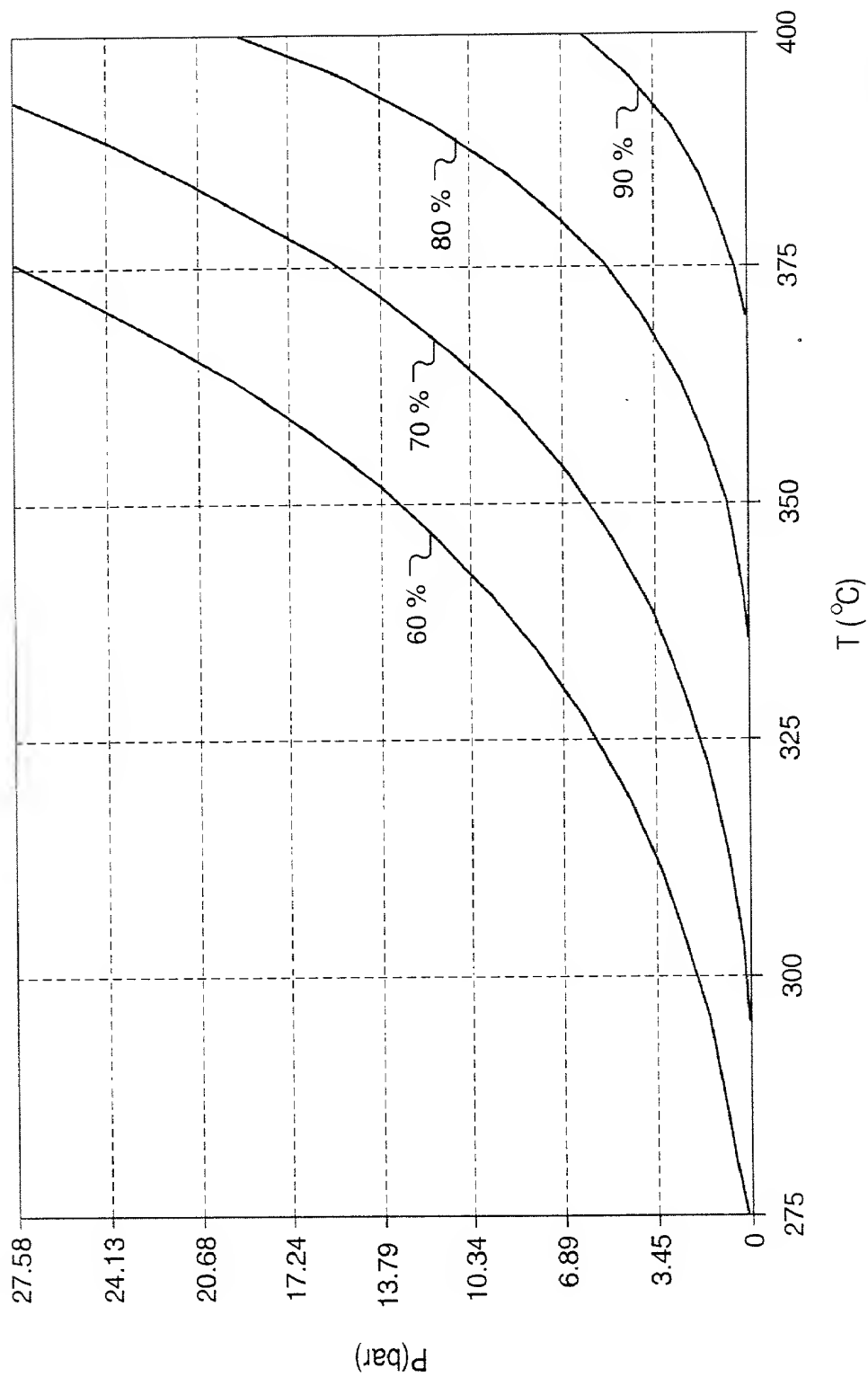


FIG. 95

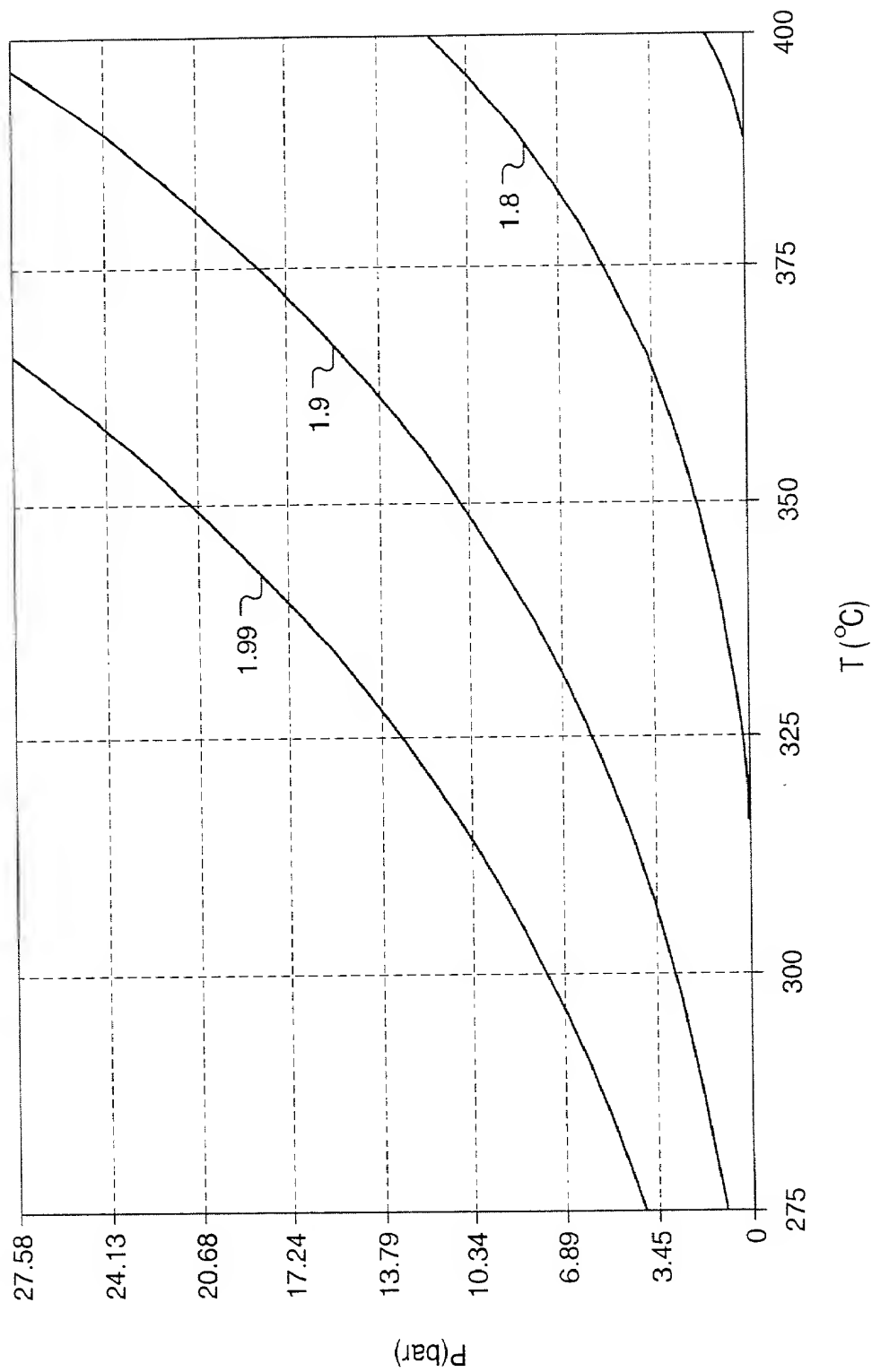


FIG. 96

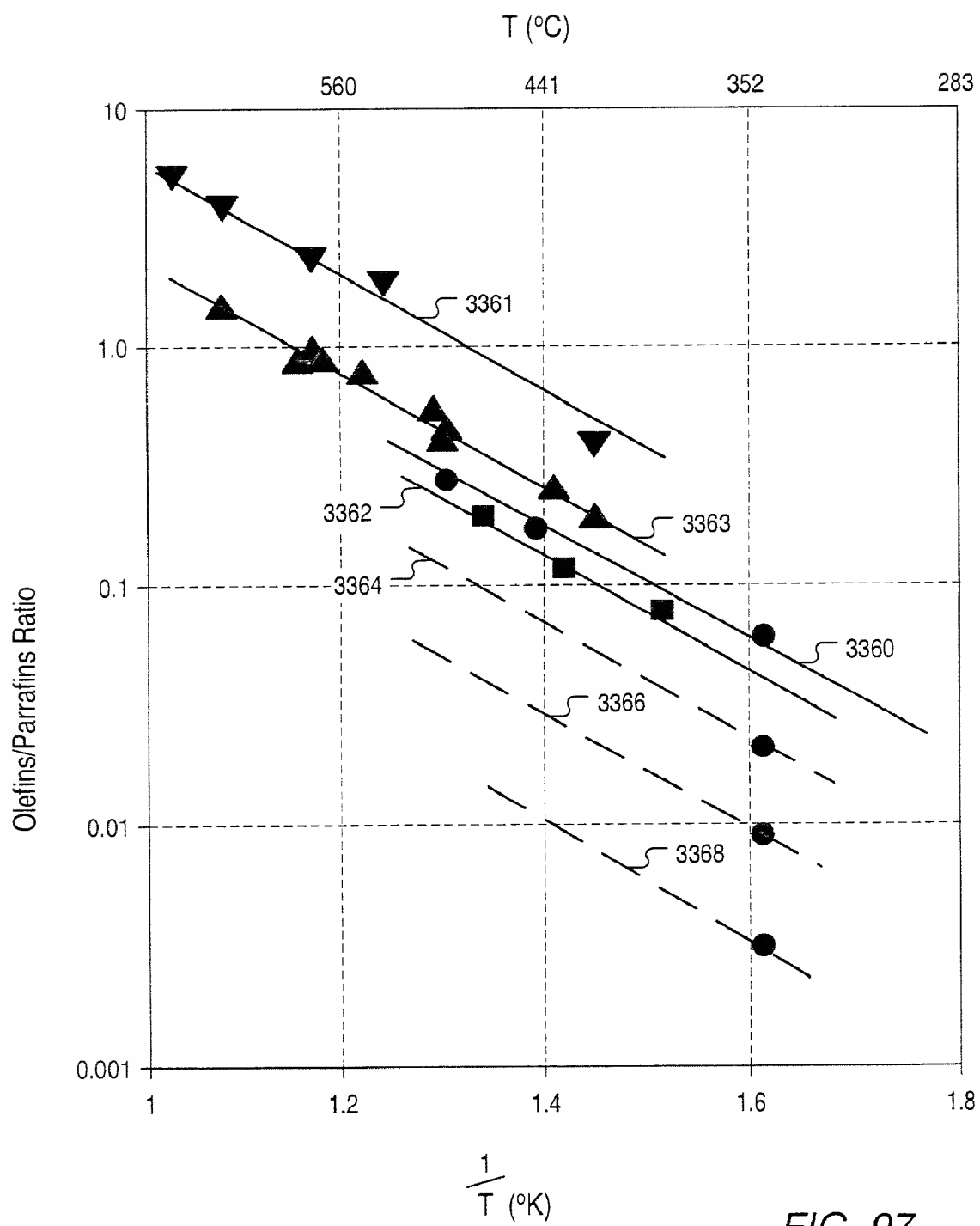


FIG. 97

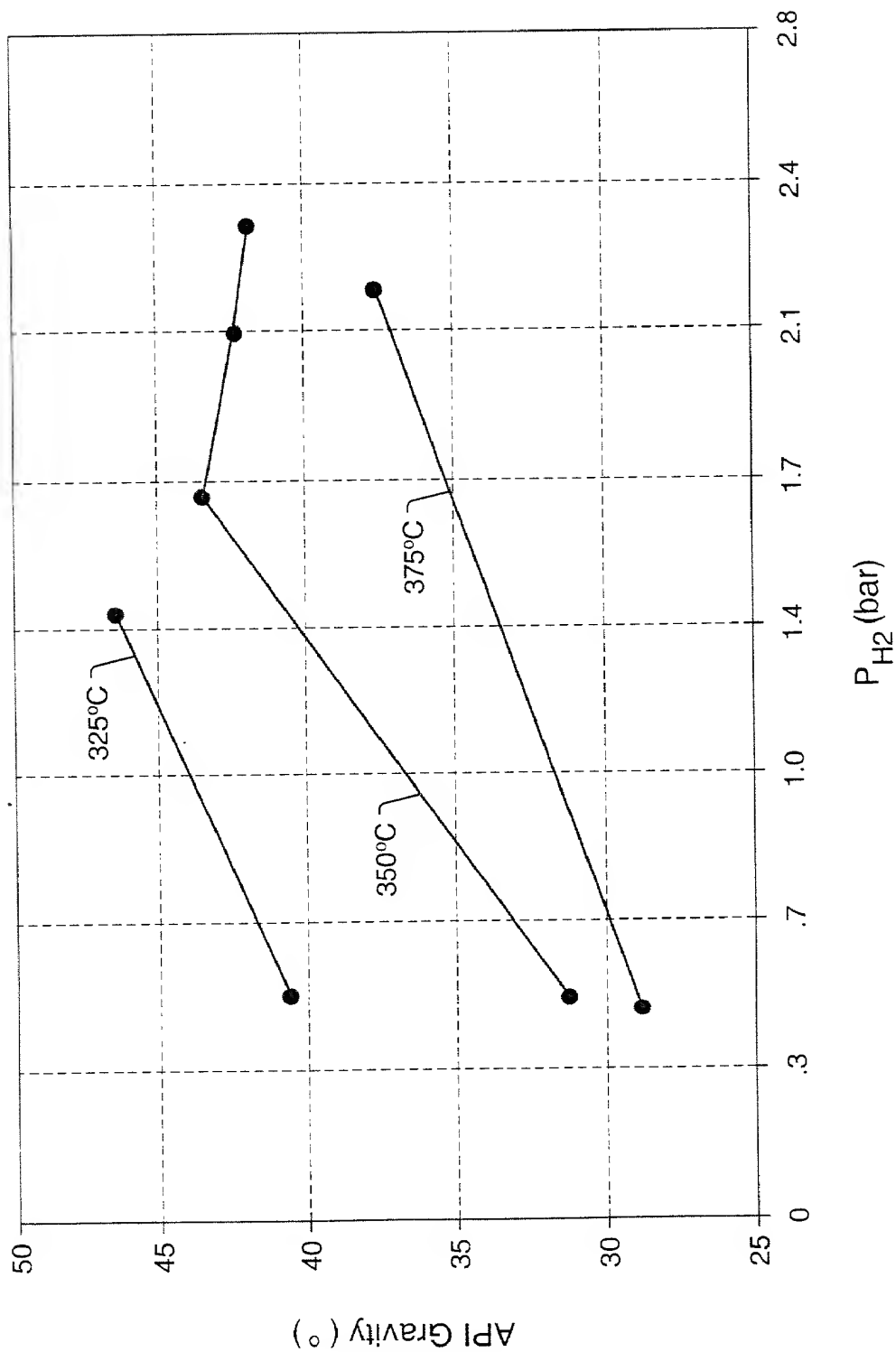


FIG. 98

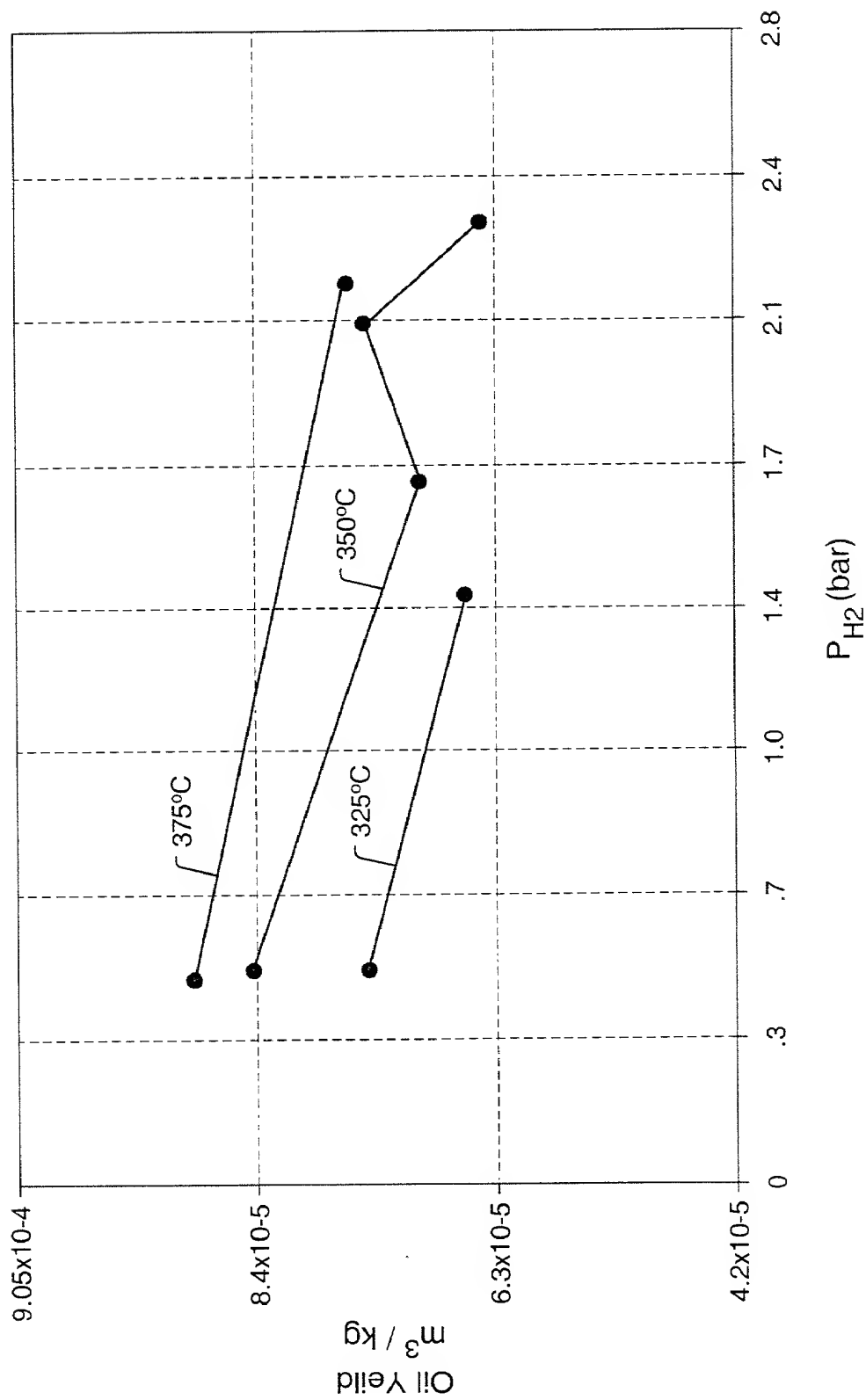


FIG. 99

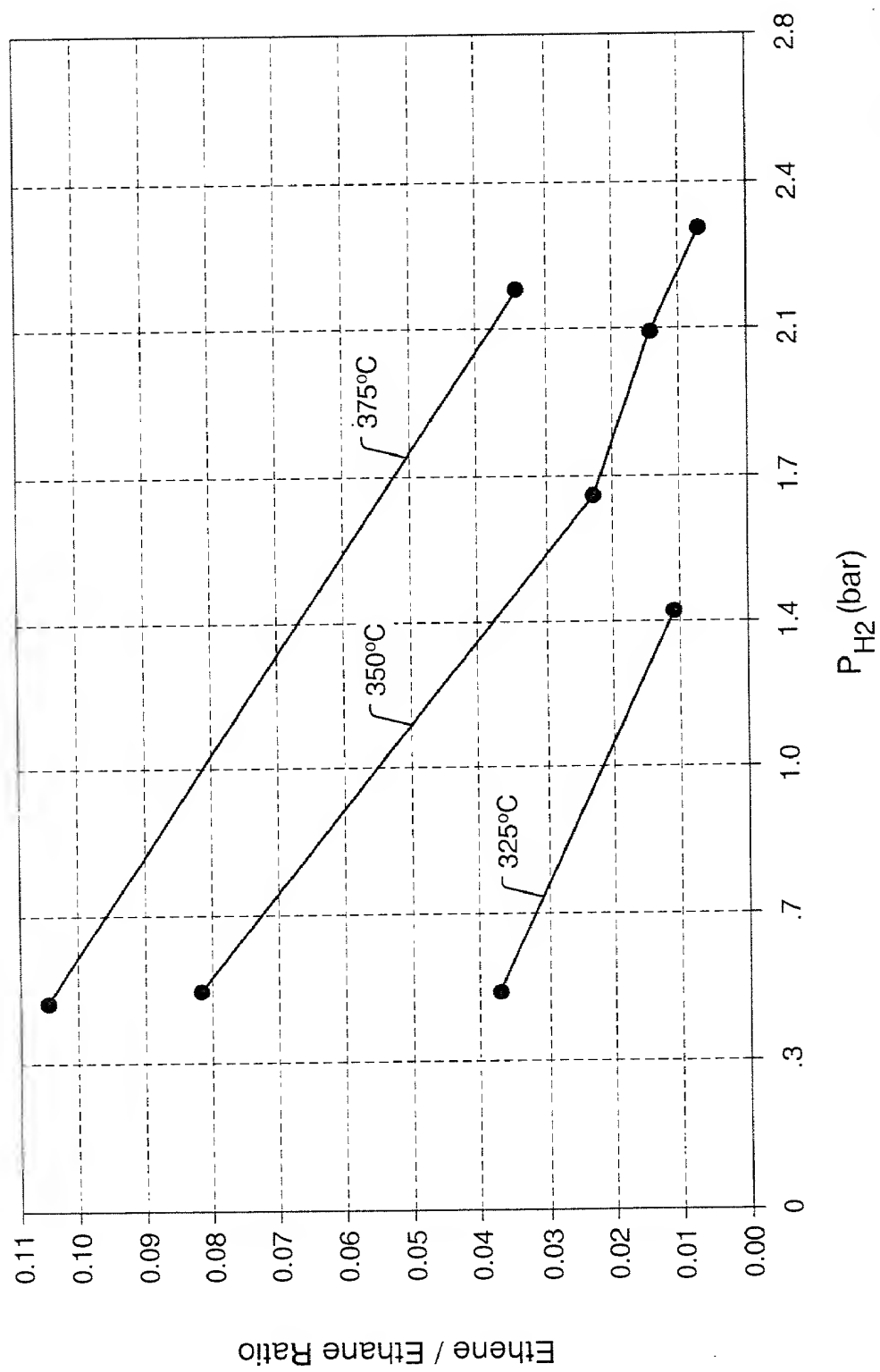


FIG. 100

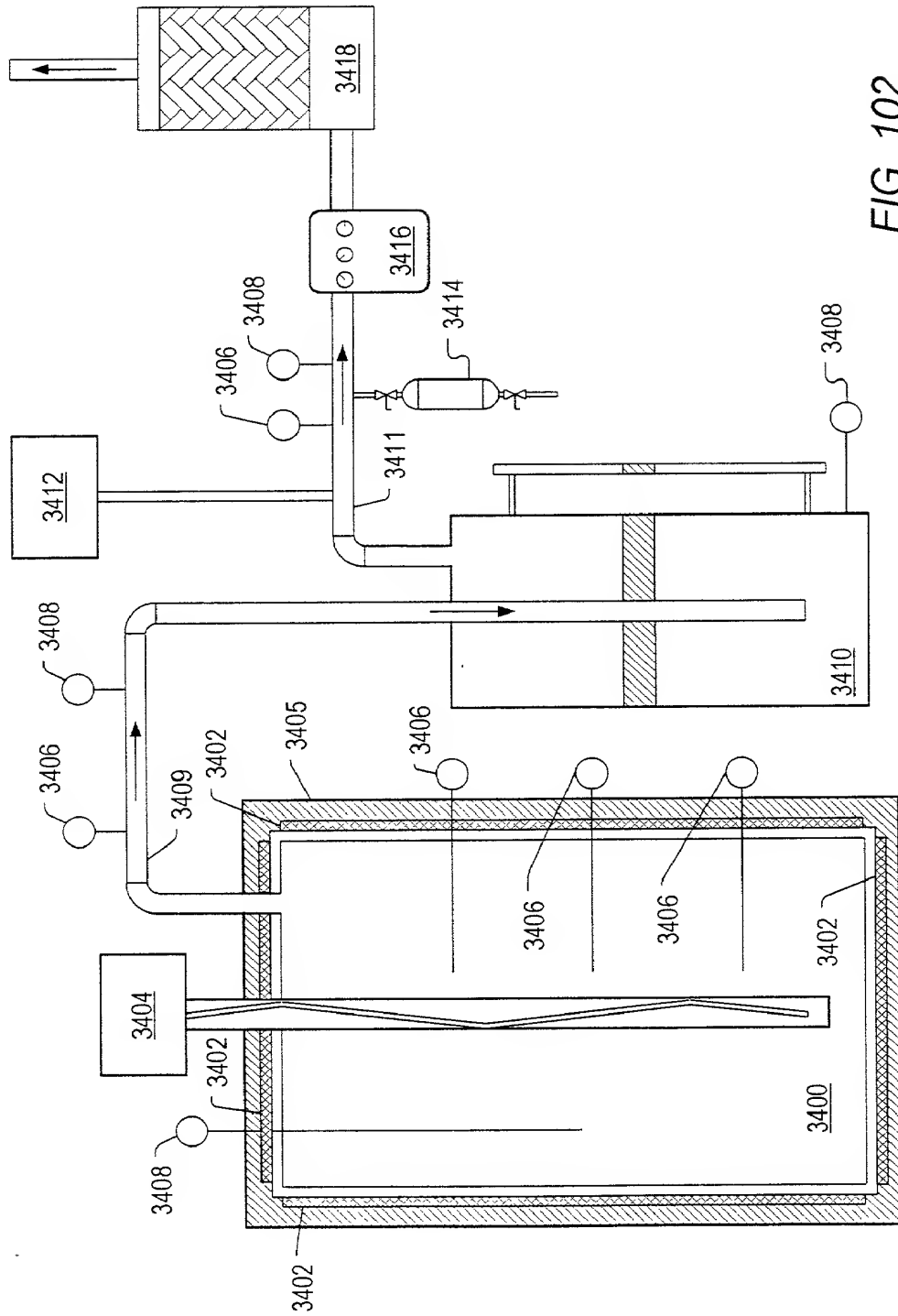
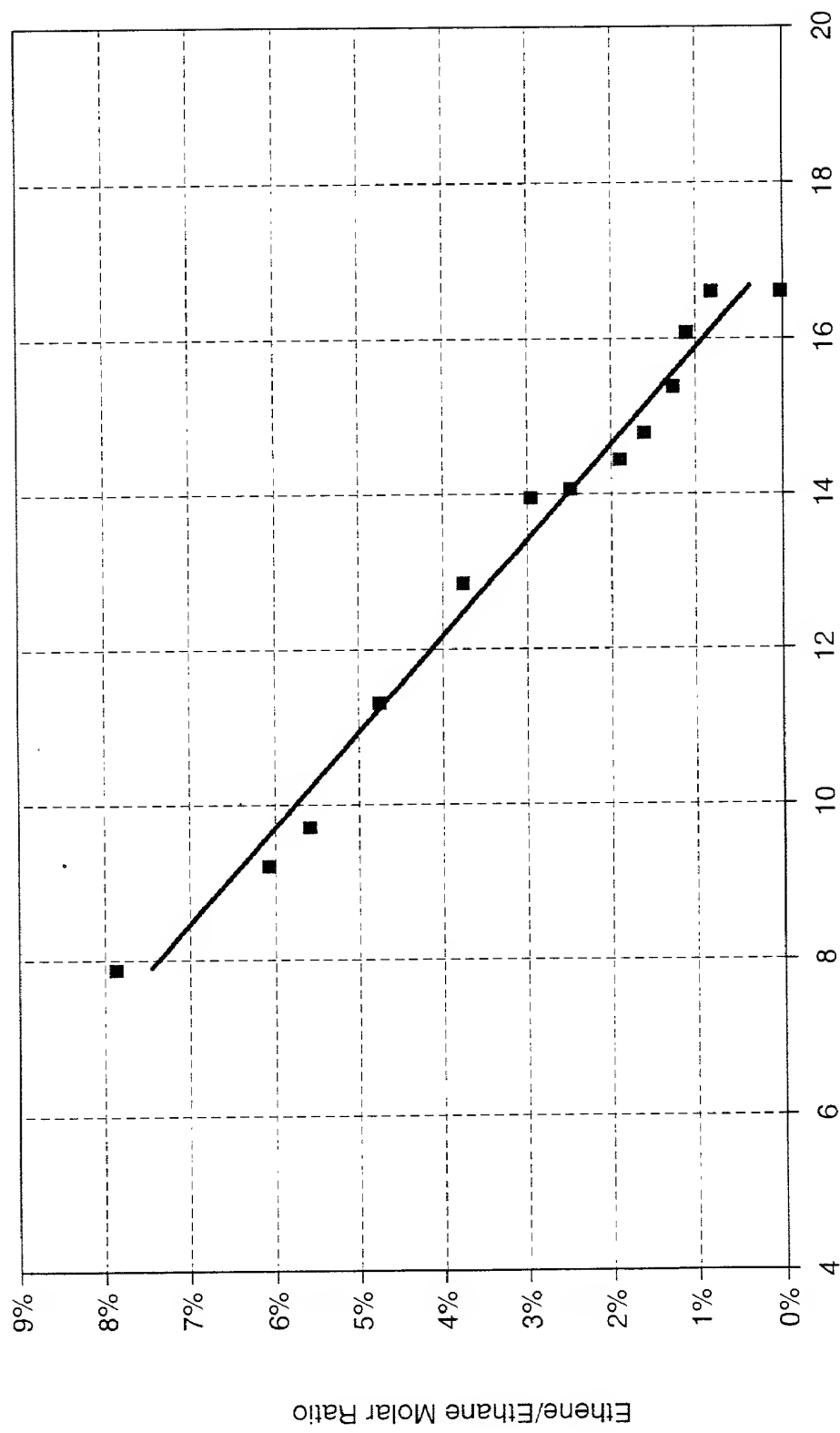


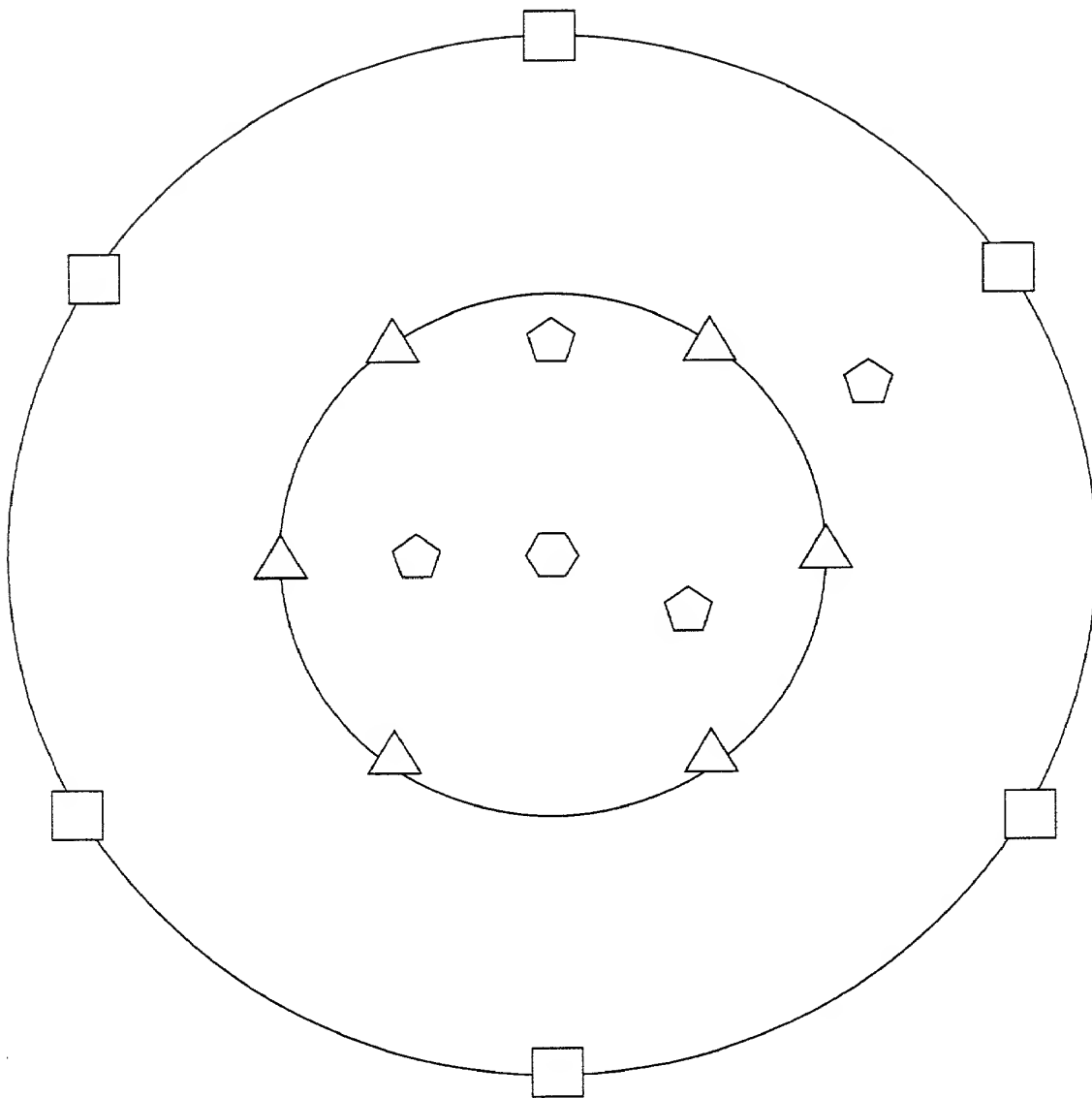
FIG. 102



H₂ Concentration (mol%)

FIG. 103

FIG. 104 is a schematic diagram of a network topology. The diagram shows a central node (3602) connected to a ring of nodes (3600, 3603, 3604). The nodes are arranged in a circular pattern, with the central node (3602) at the center. The nodes are connected by lines, forming a ring structure. The nodes are labeled with their respective IDs: 3600, 3603, 3604, and 3602.



△ - 3600

⬠ - 3603

□ - 3604

⬡ - 3602

FIG. 104

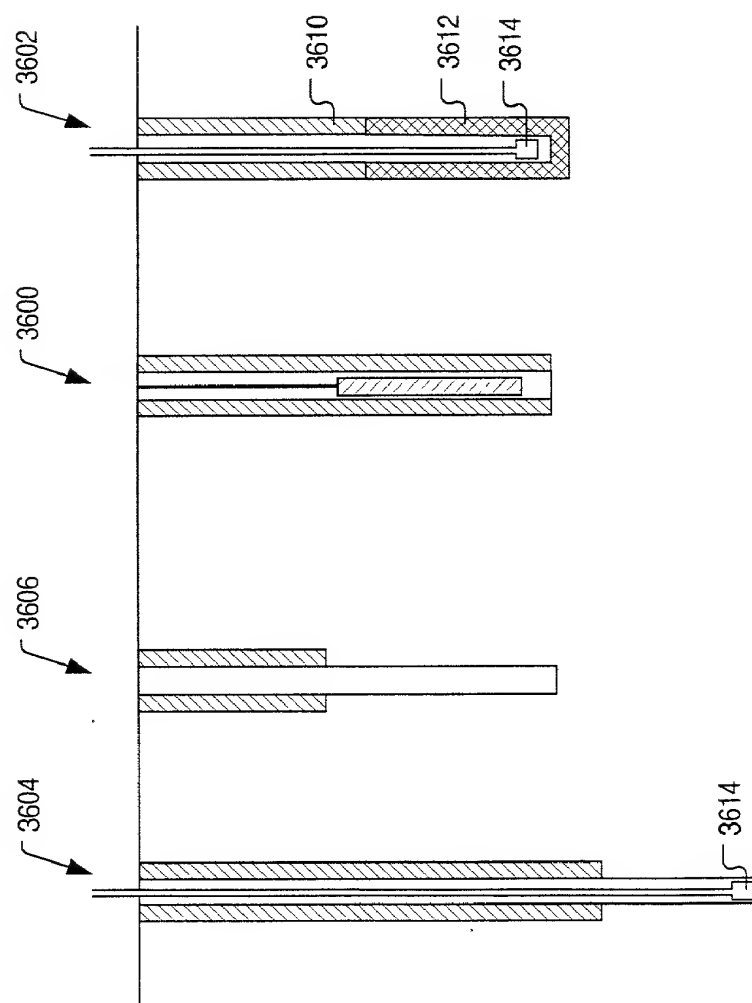


FIG. 105

time (days)

FIG. 107

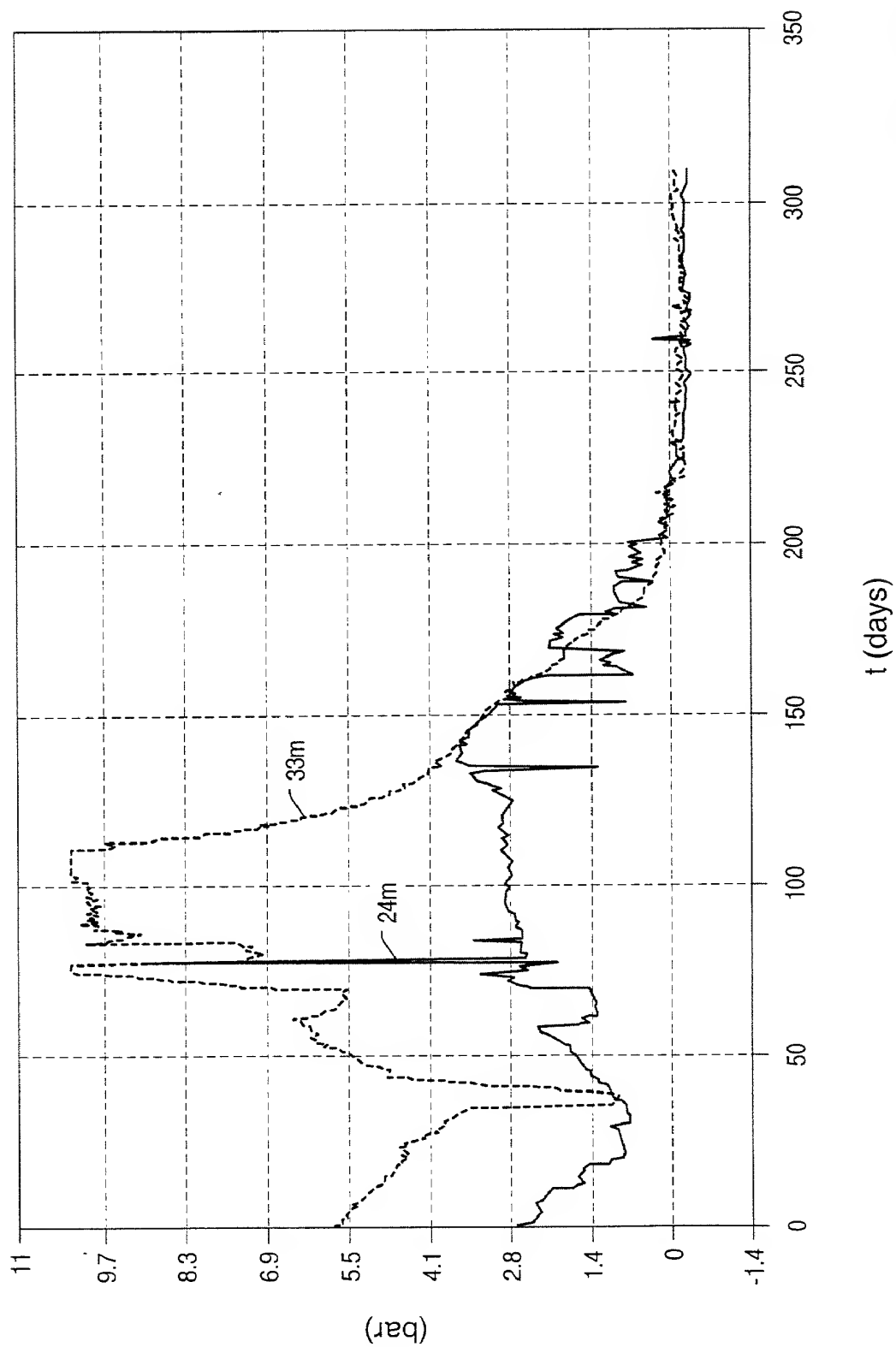


FIG. 107

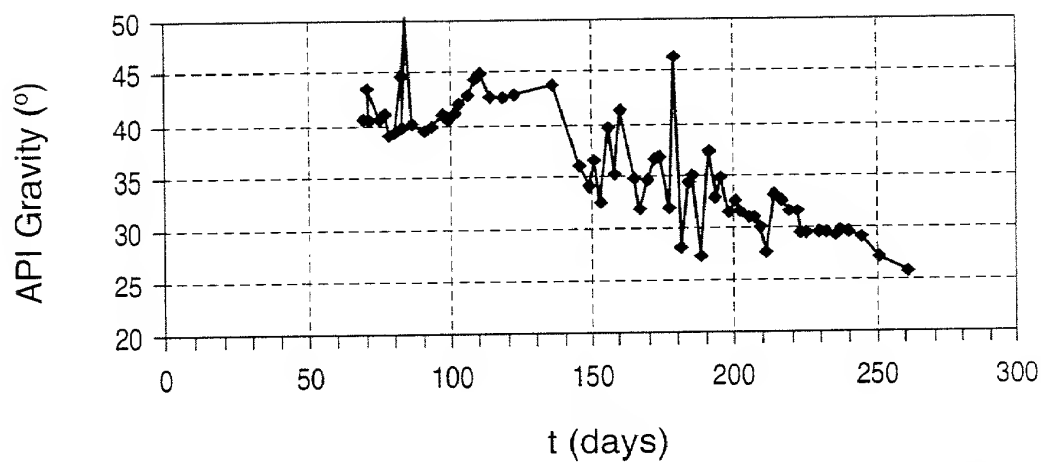


FIG. 108

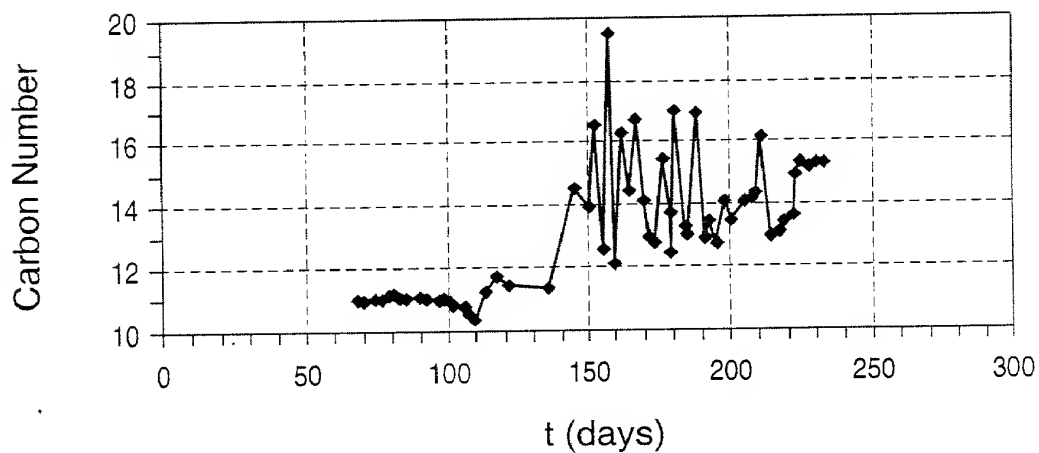


FIG. 109

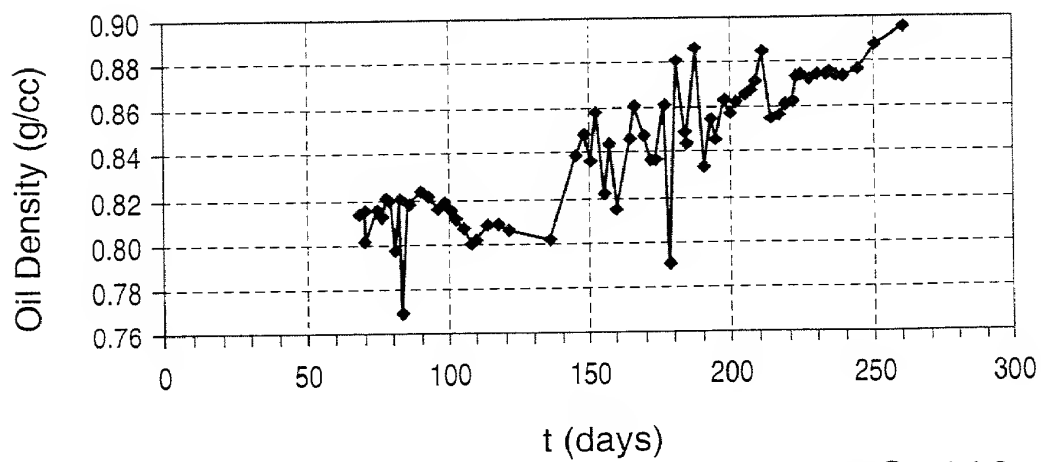


FIG. 110

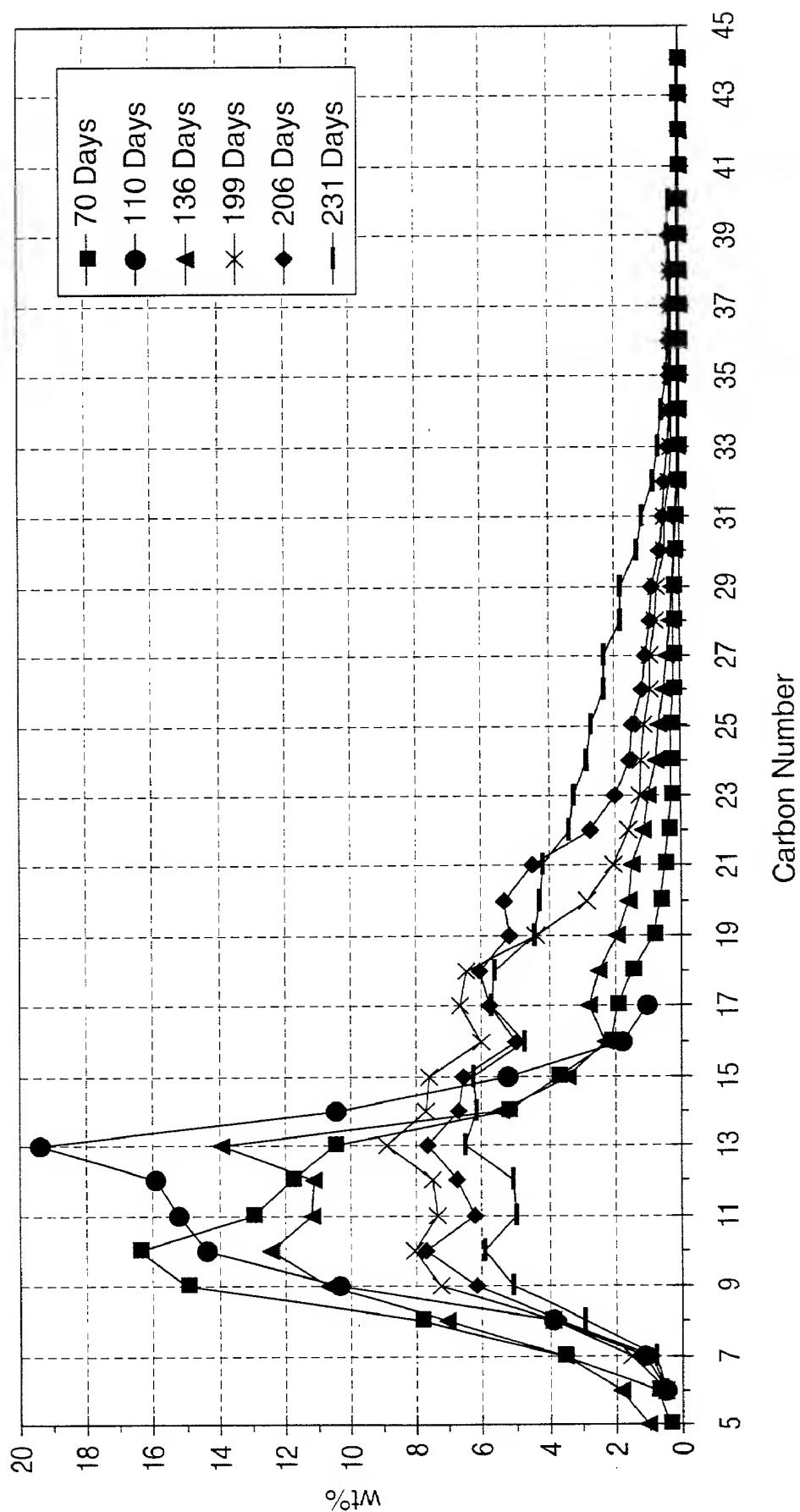


FIG. 111

Sample 3620 3622 3624 3626 3628 3630 3632 3634 3636 3638 3640 3642 3644 3646 3648 3650 3652 3654 3656 3658 3660 3662 3664 3666 3668 3670 3672 3674 3676 3678 3680 3682 3684 3686 3688 3690 3692 3694 3696 3698 3700 3702 3704 3706 3708 3710 3712 3714 3716 3718 3720 3722 3724 3726 3728 3730 3732 3734 3736 3738 3740 3742 3744 3746 3748 3750 3752 3754 3756 3758 3760 3762 3764 3766 3768 3770 3772 3774 3776 3778 3780 3782 3784 3786 3788 3790 3792 3794 3796 3798 3800 3802 3804 3806 3808 3810 3812 3814 3816 3818 3820 3822 3824 3826 3828 3830 3832 3834 3836 3838 3840 3842 3844 3846 3848 3850 3852 3854 3856 3858 3860 3862 3864 3866 3868 3870 3872 3874 3876 3878 3880 3882 3884 3886 3888 3890 3892 3894 3896 3898 3900 3902 3904 3906 3908 3910 3912 3914 3916 3918 3920 3922 3924 3926 3928 3930 3932 3934 3936 3938 3940 3942 3944 3946 3948 3950 3952 3954 3956 3958 3960 3962 3964 3966 3968 3970 3972 3974 3976 3978 3980 3982 3984 3986 3988 3990 3992 3994 3996 3998 4000

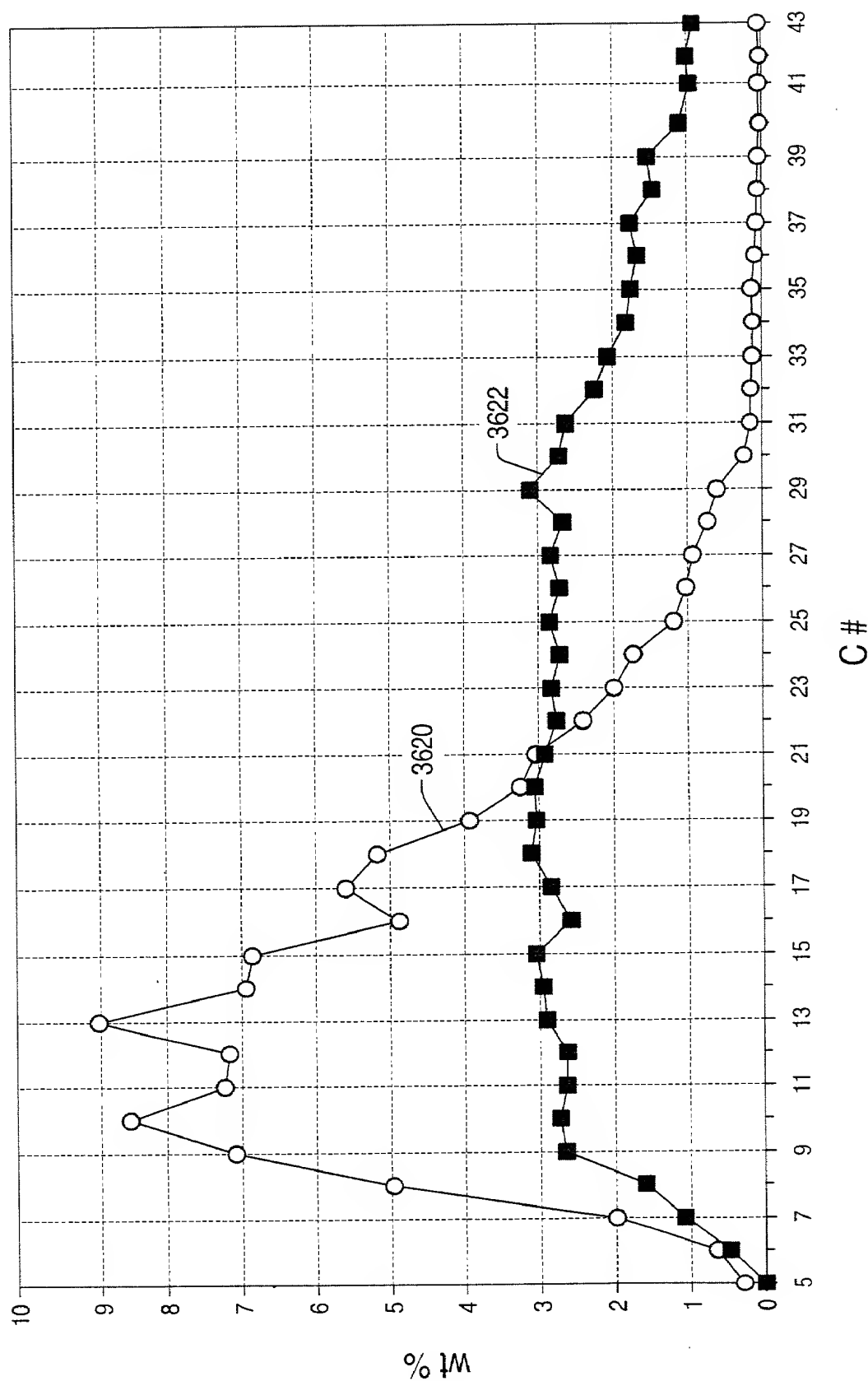


FIG. 112

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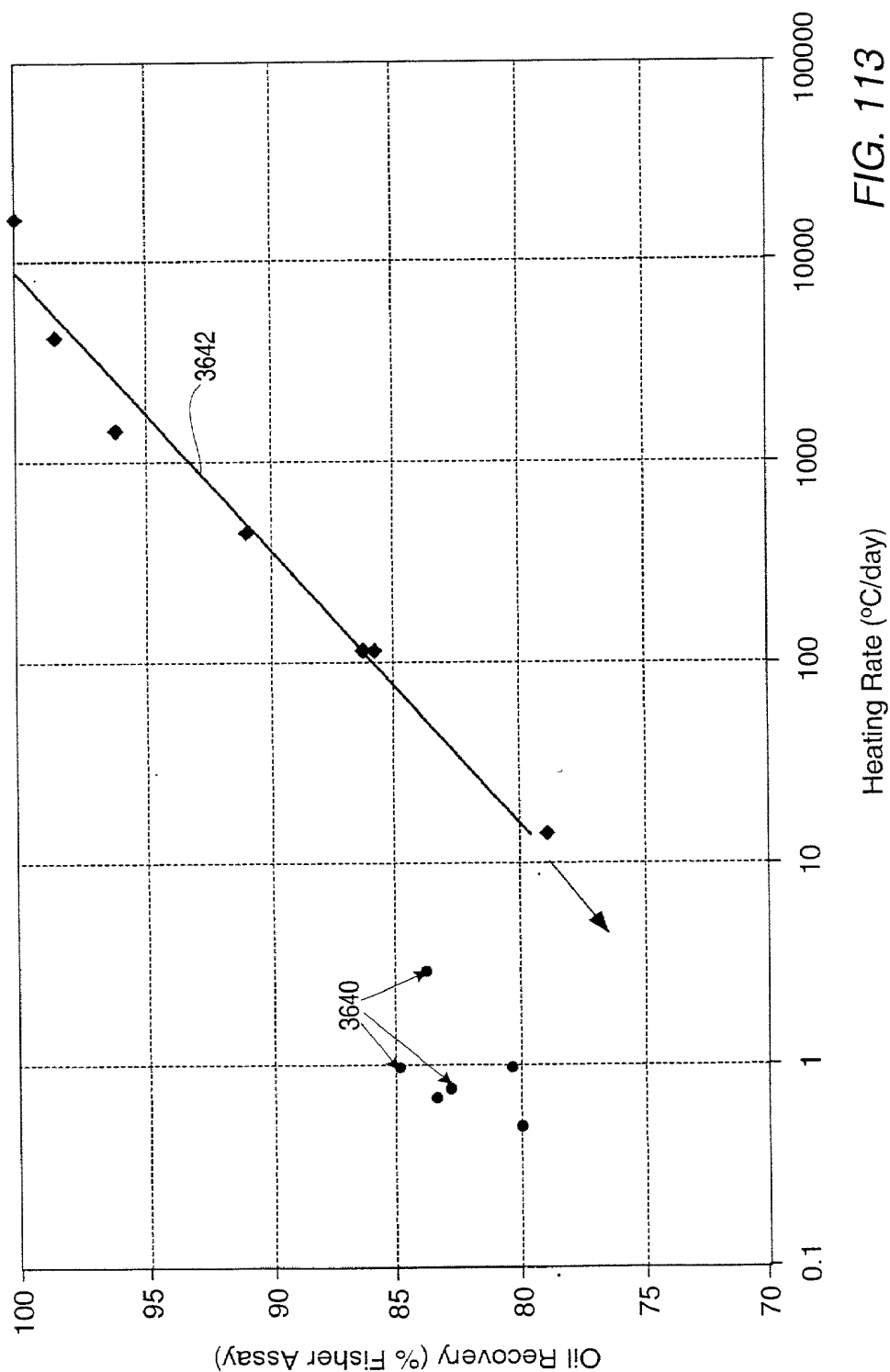


FIG. 113

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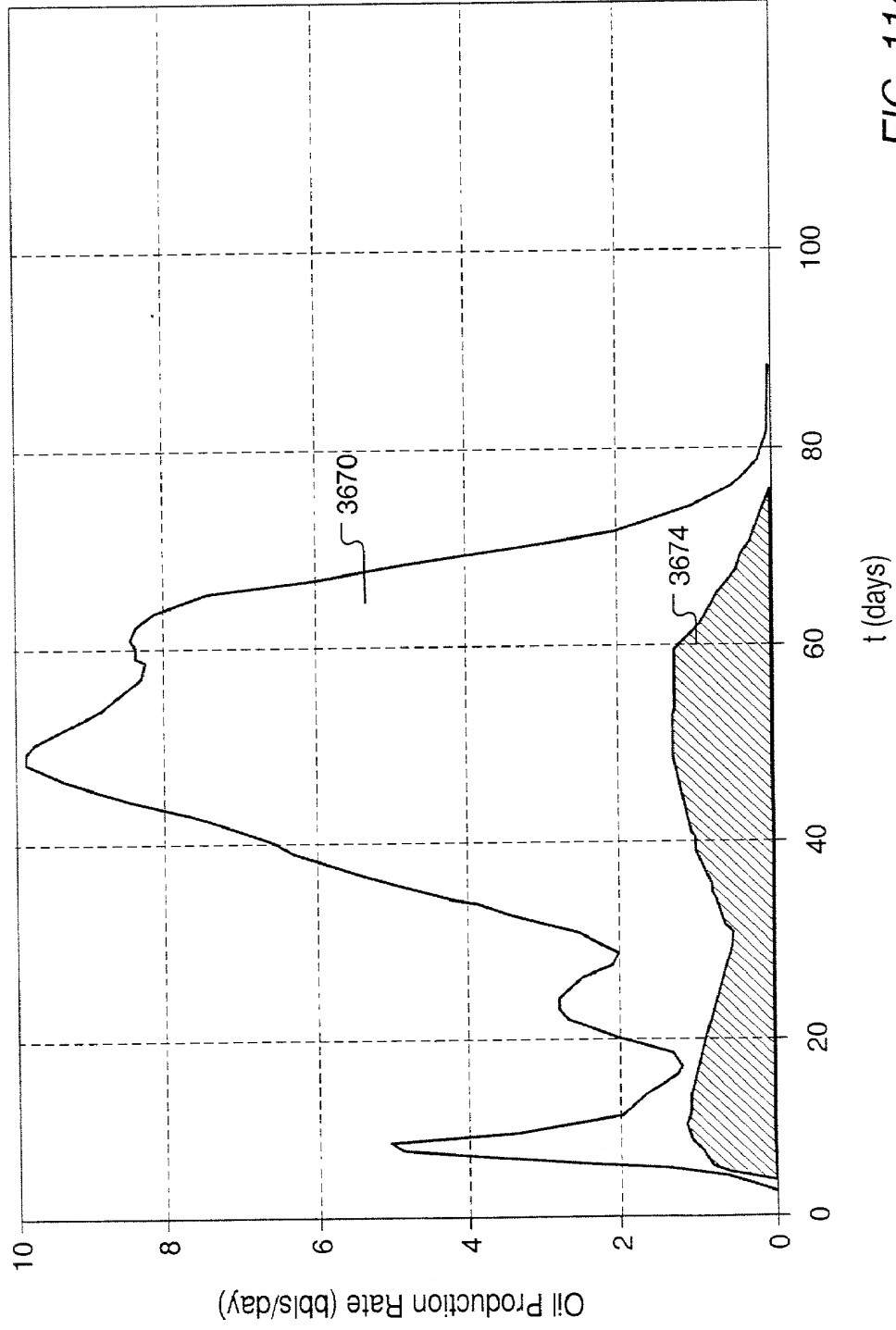


FIG. 114

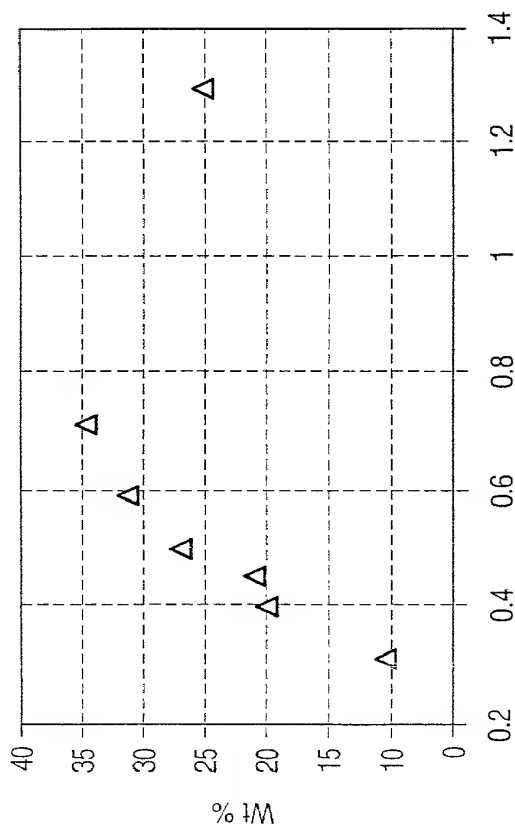


FIG. 115

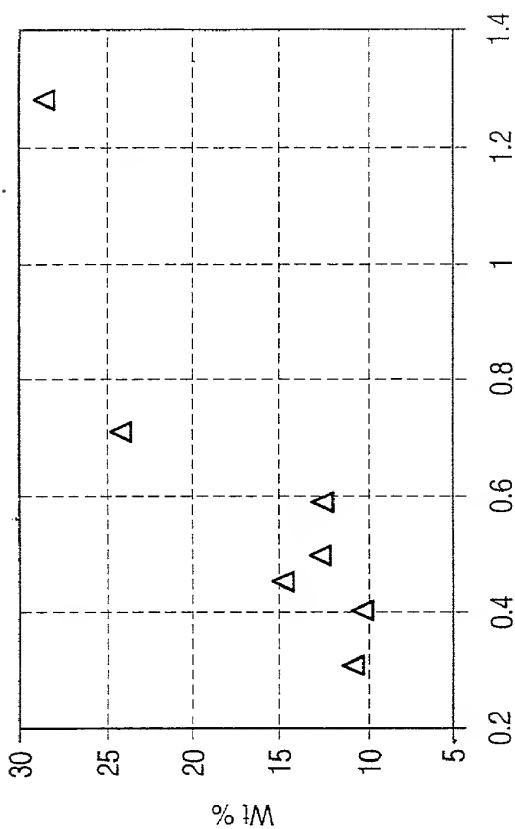


FIG. 116

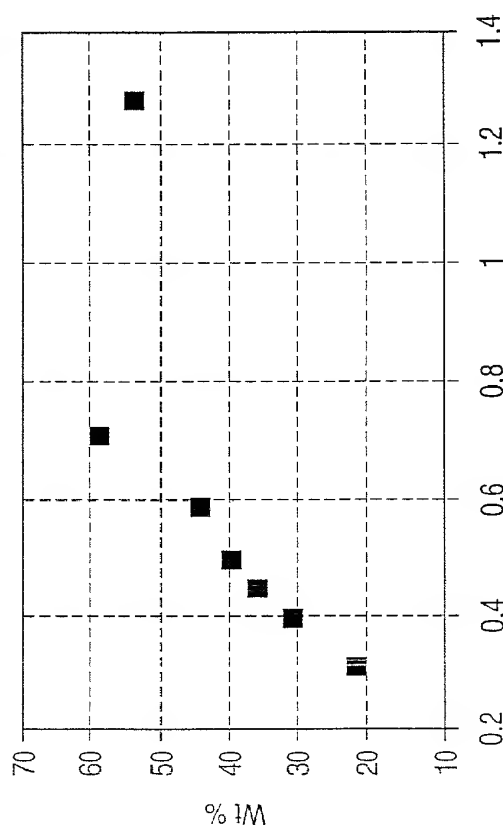


FIG. 117

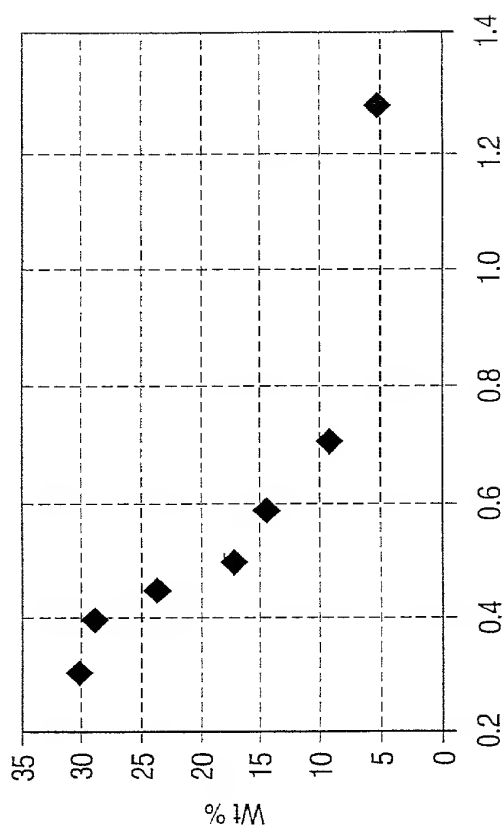


FIG. 118

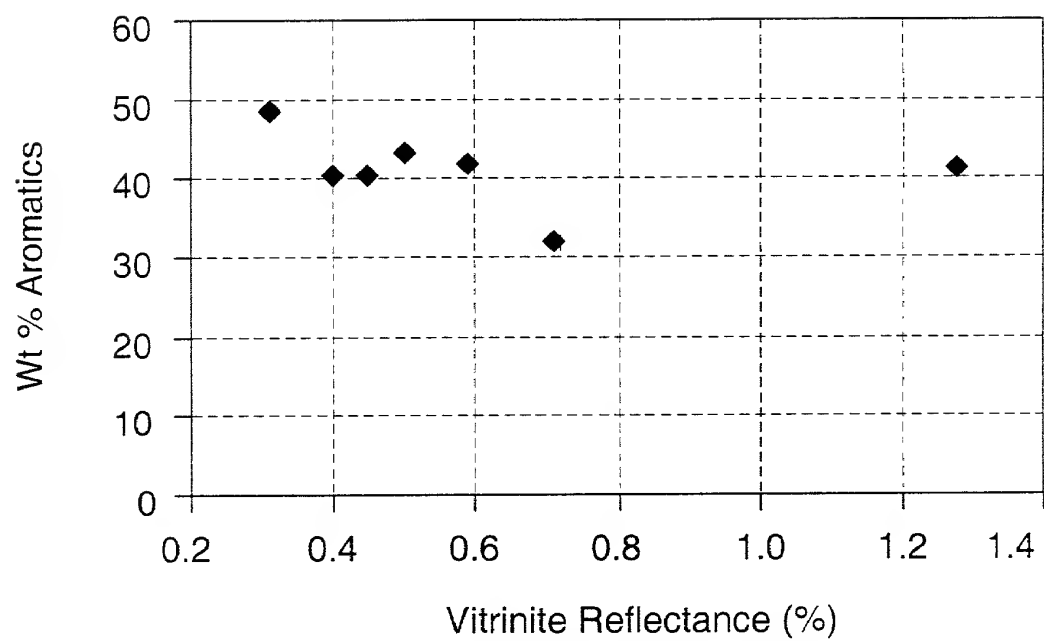


FIG. 119

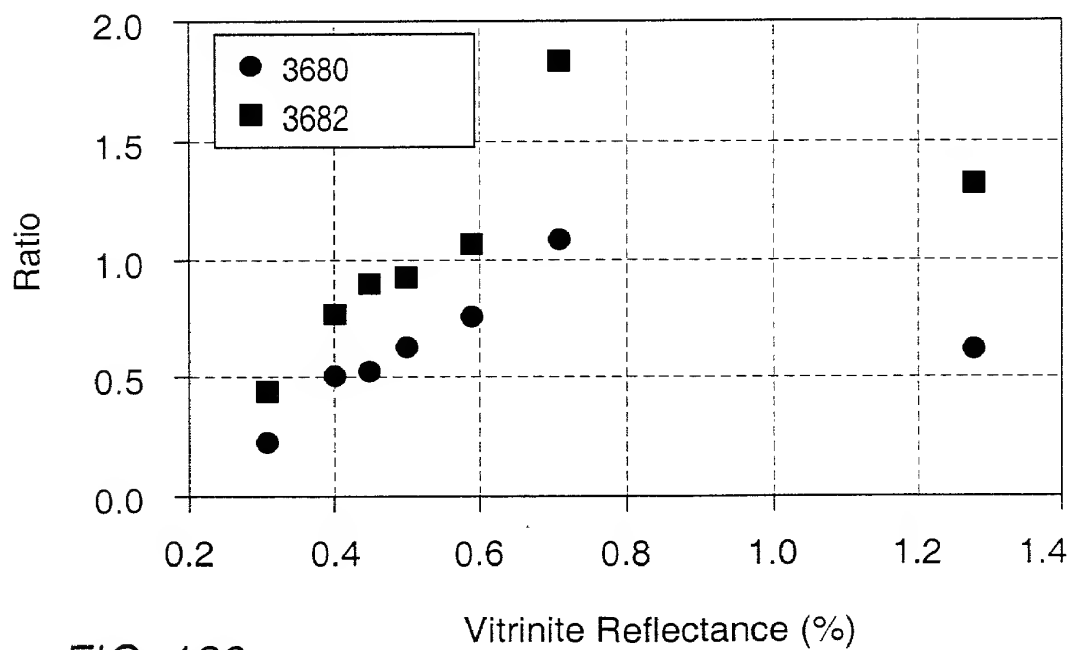


FIG. 120

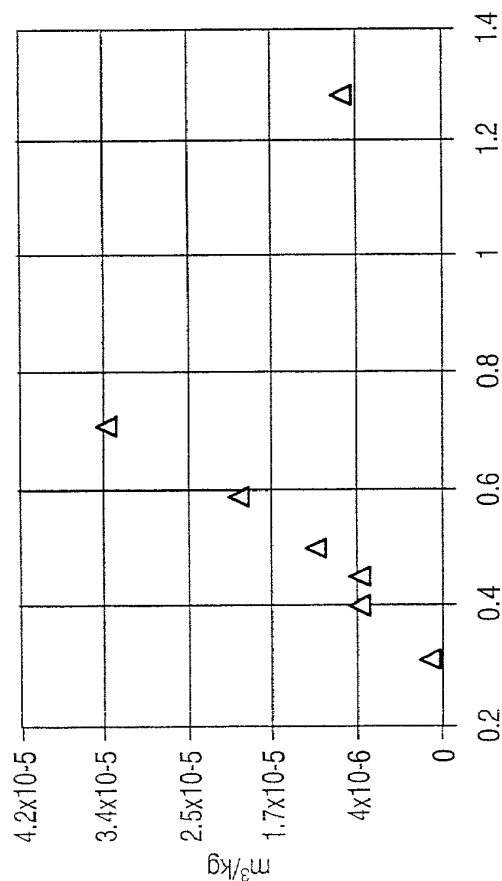


FIG. 121

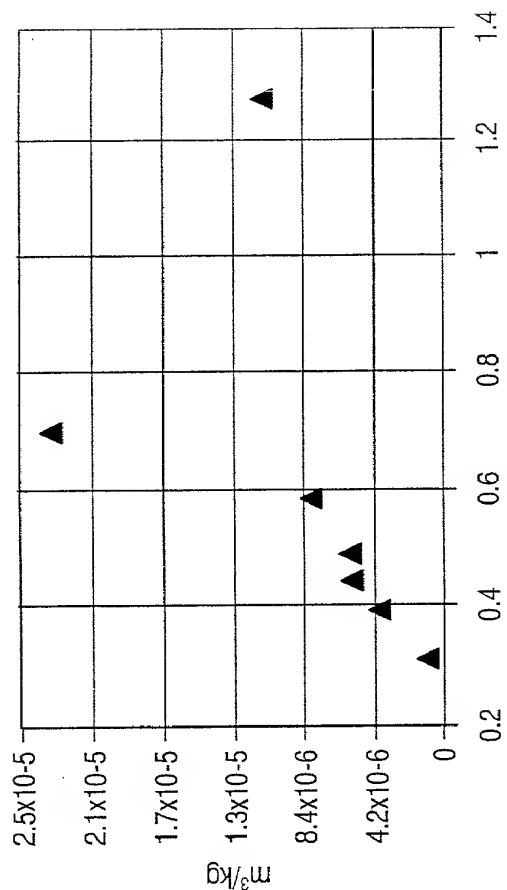


FIG. 122

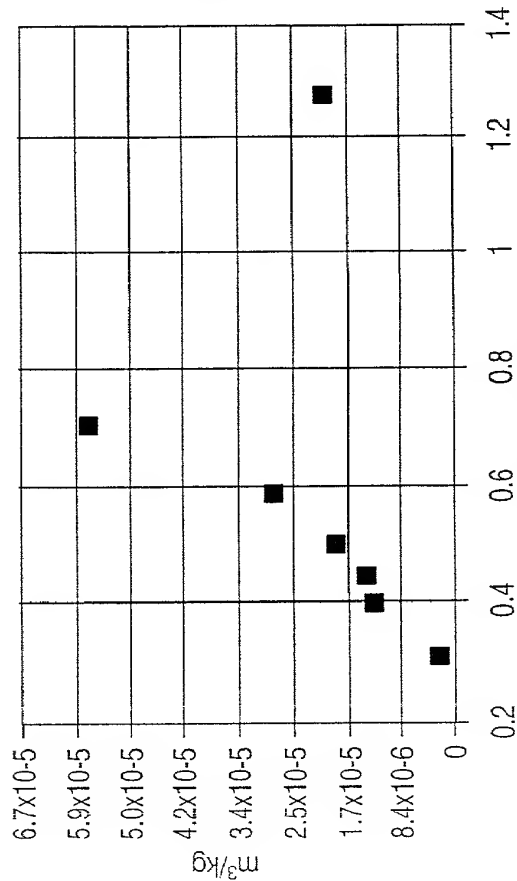


FIG. 123

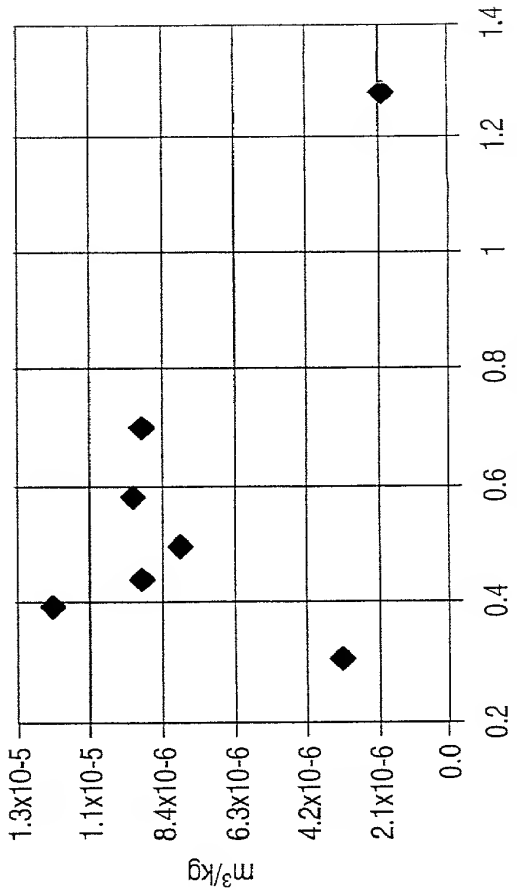
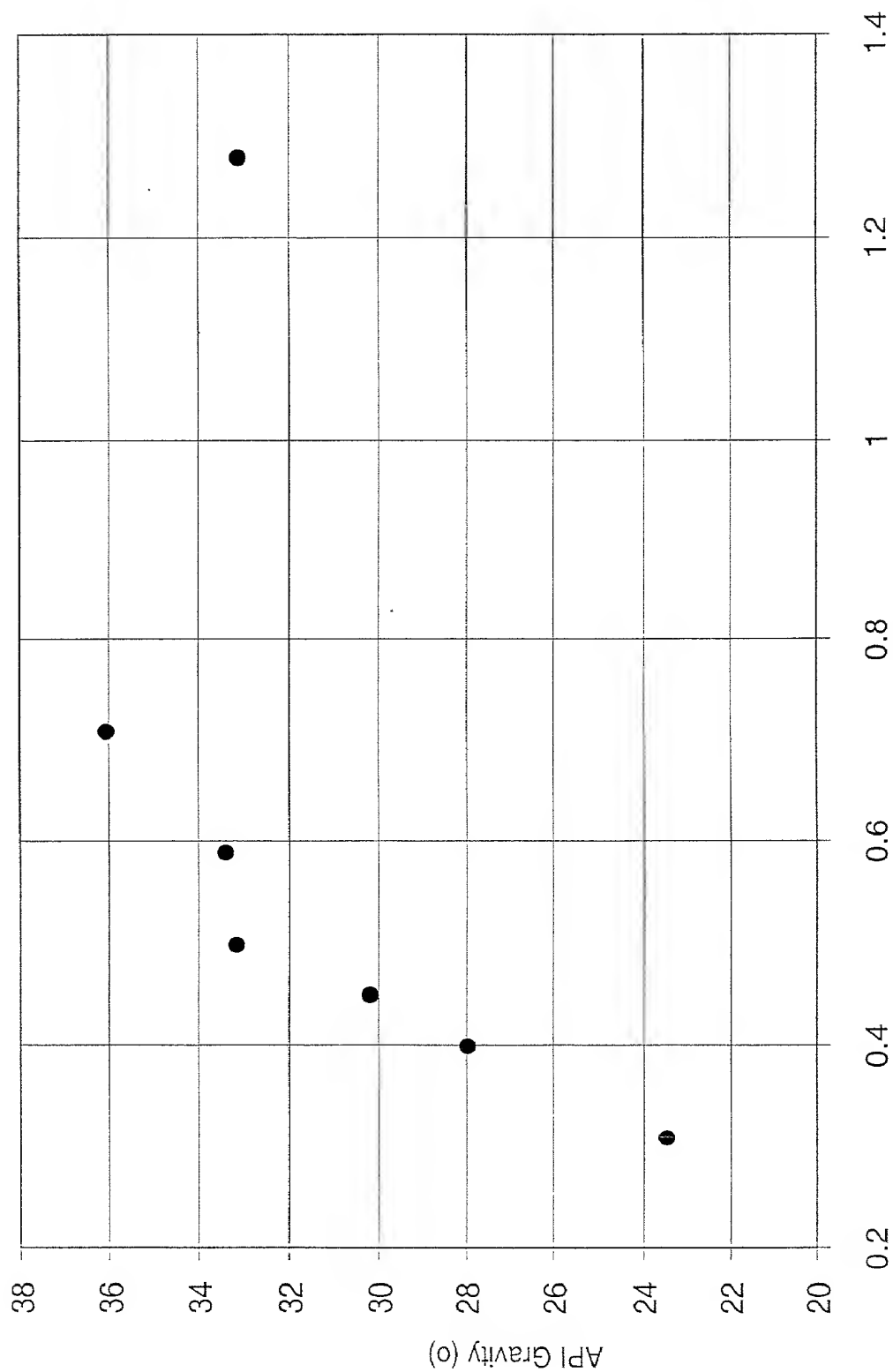


FIG. 124

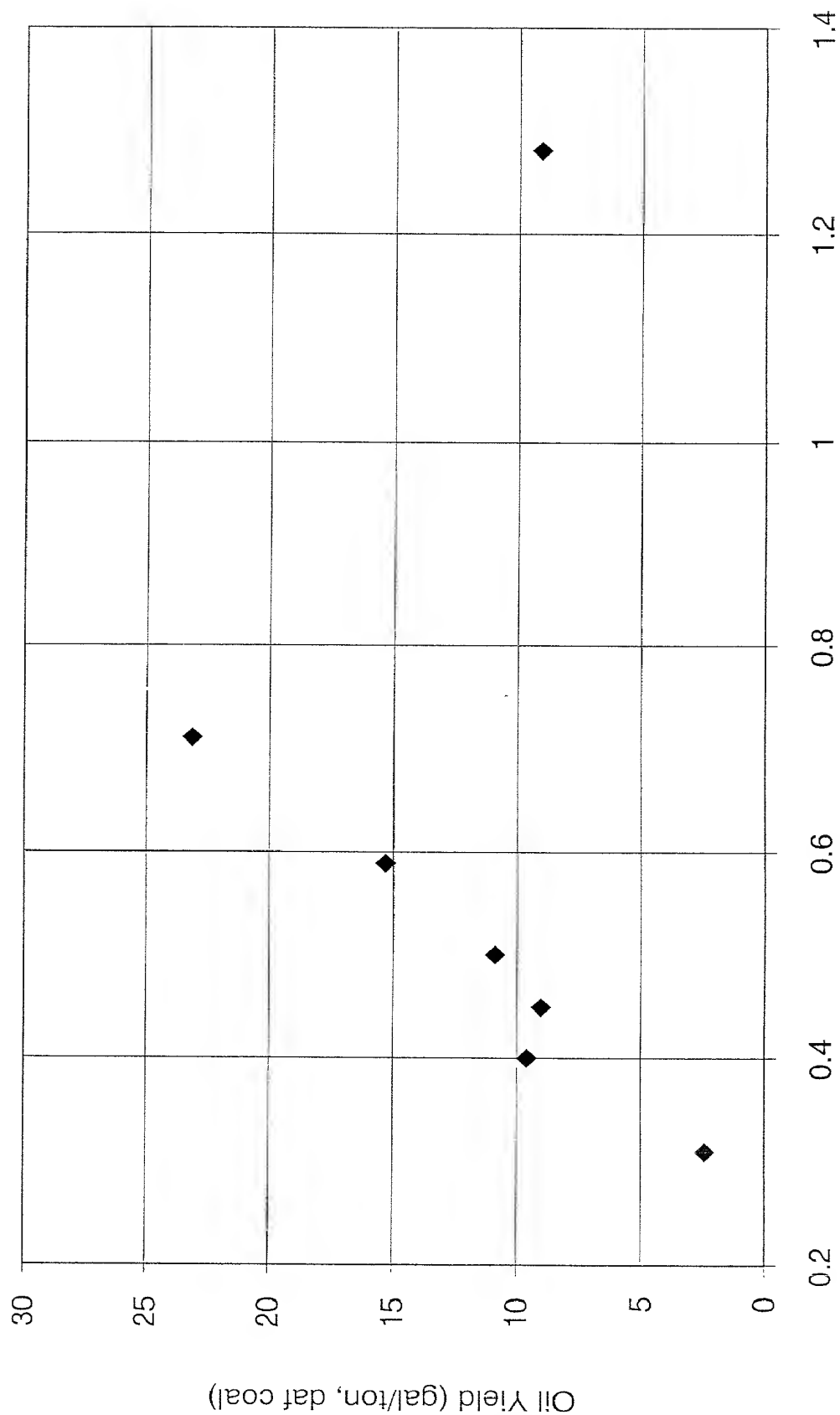
API Gravity (°) vs. Vitrinite Reflectance (%)



Vitrinite Reflectance (%)

FIG. 125

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Vitrinite Reflectance (%)

FIG. 126

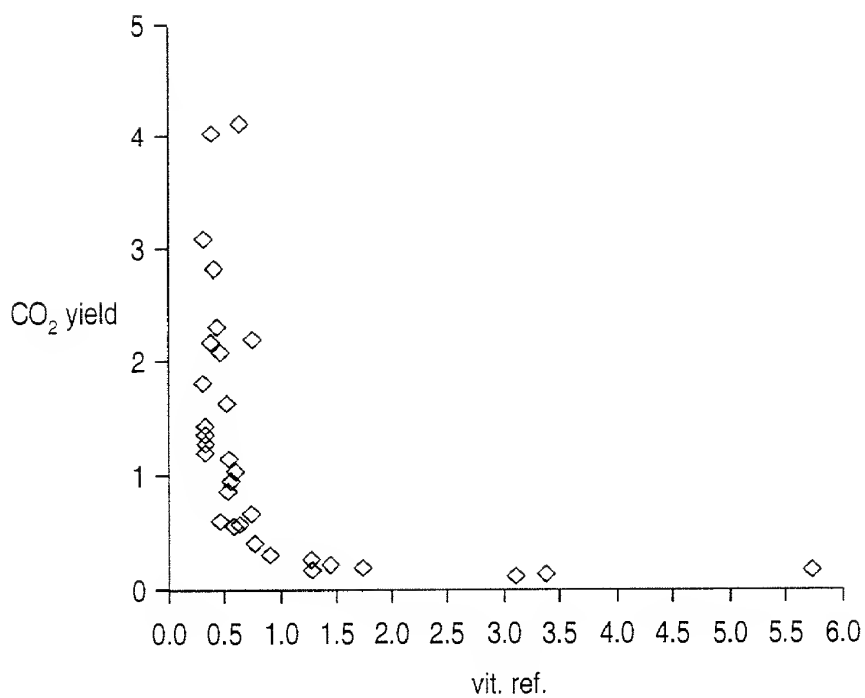


FIG. 127

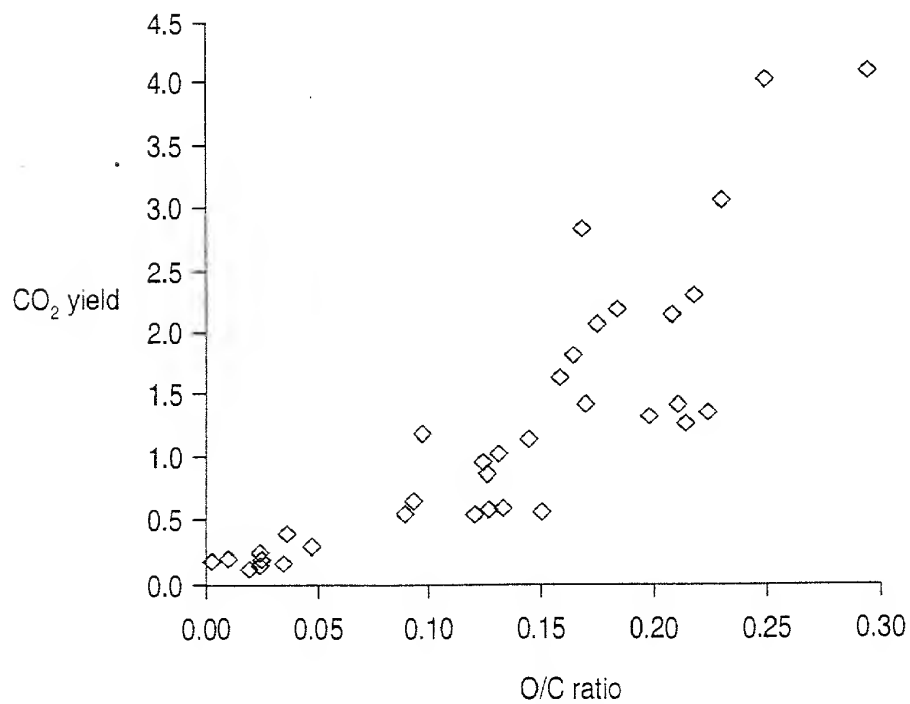


FIG. 128

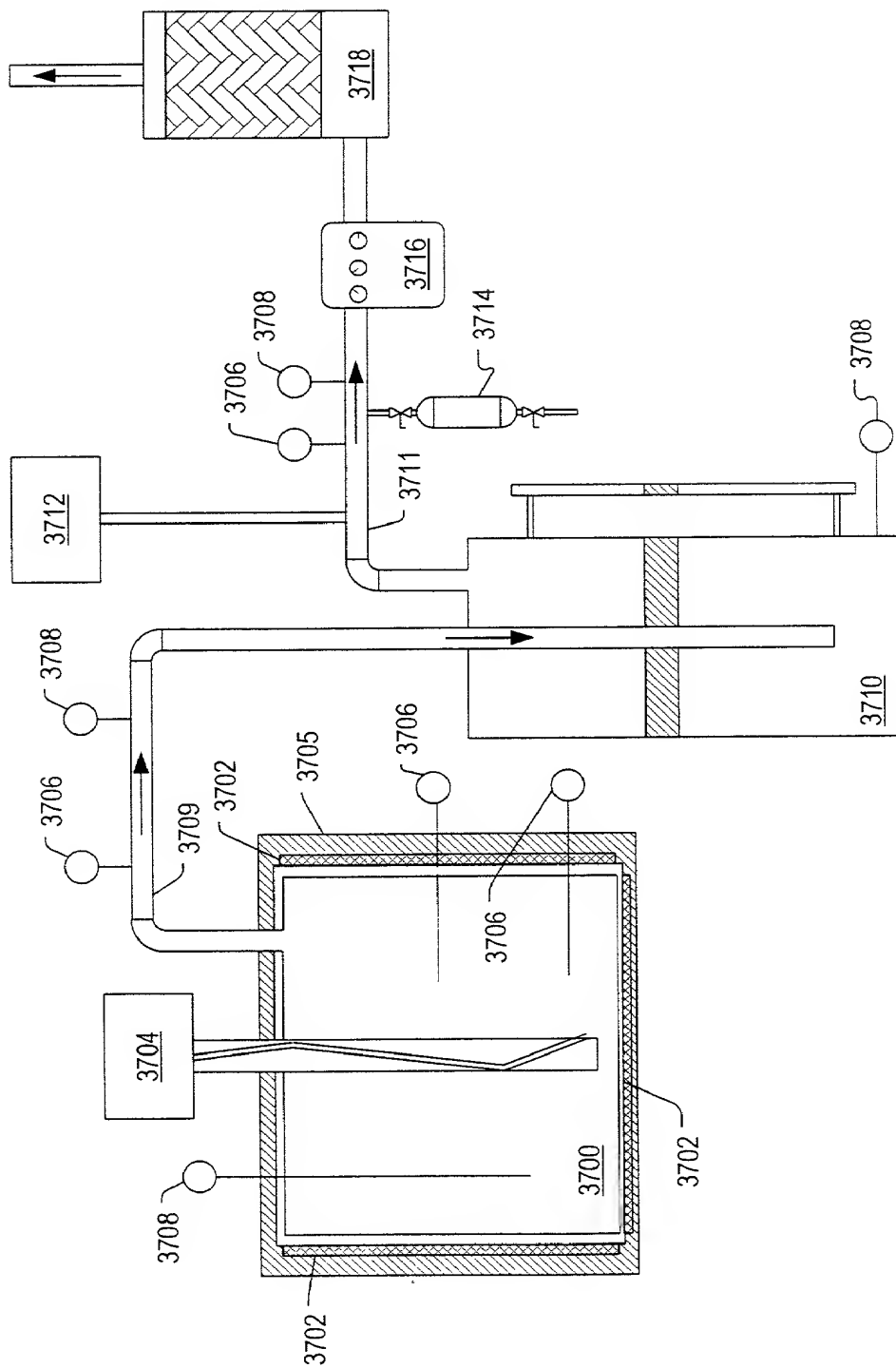


FIG. 129

Figure 130 is a graph showing the relationship between Depth (feet) and Temperature (°F) for two different data series. The Y-axis represents Depth (feet) from 0 to 50, and the X-axis represents Temperature (°F) from 0 to 1800. The graph includes two data series: one represented by squares and another by diamonds. Both series show a peak in depth around 1600°F.

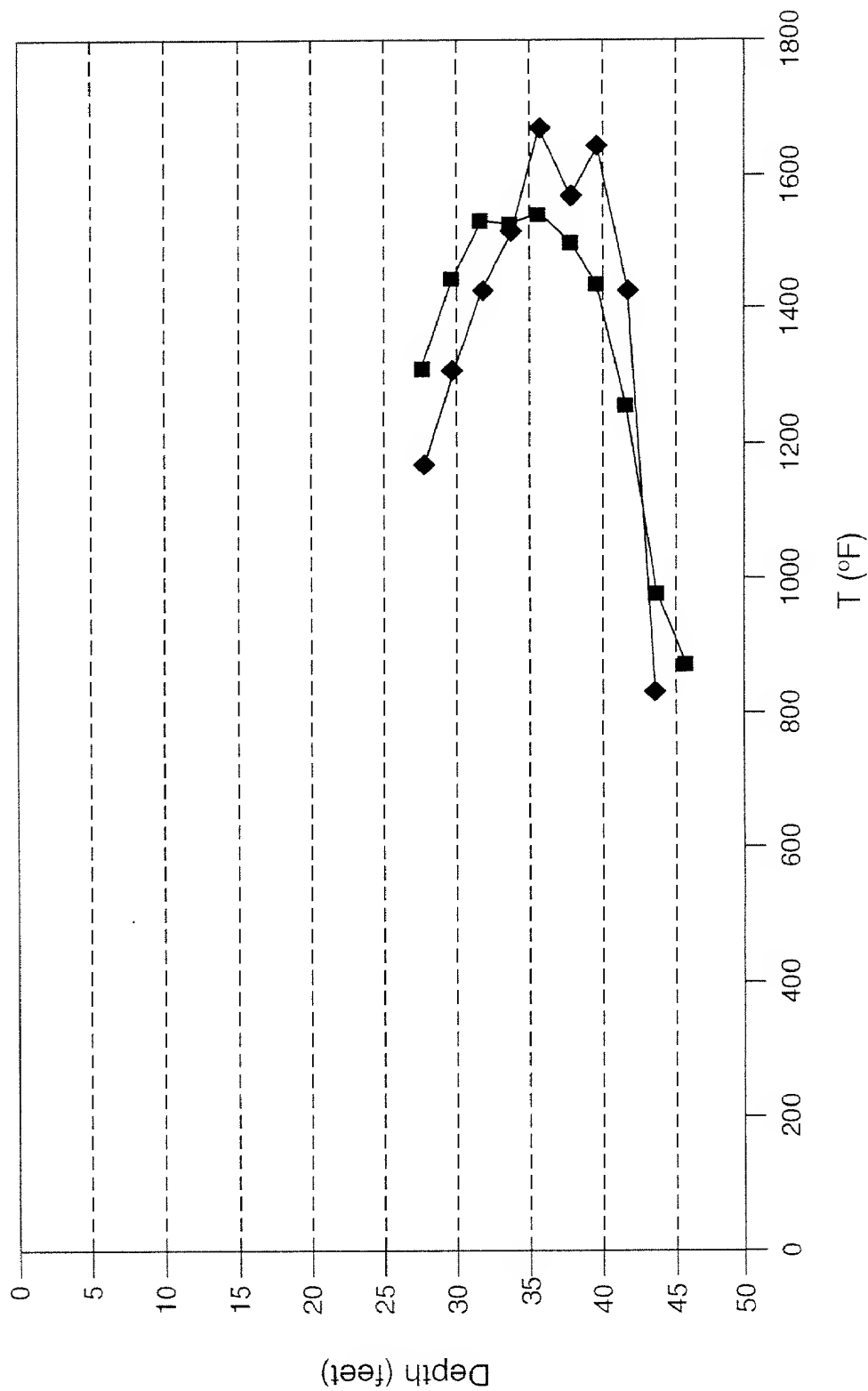


FIG. 130

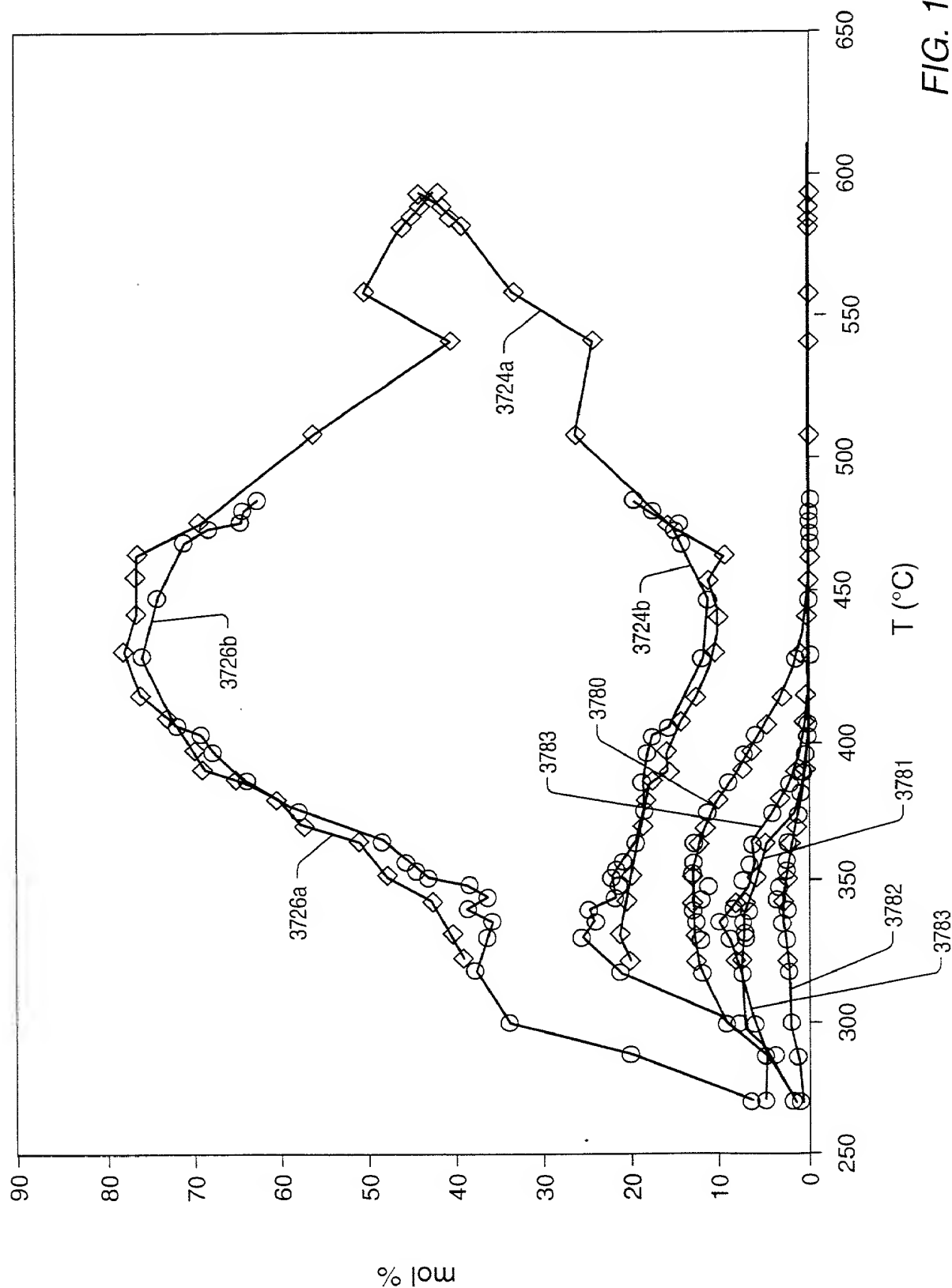


FIG. 131

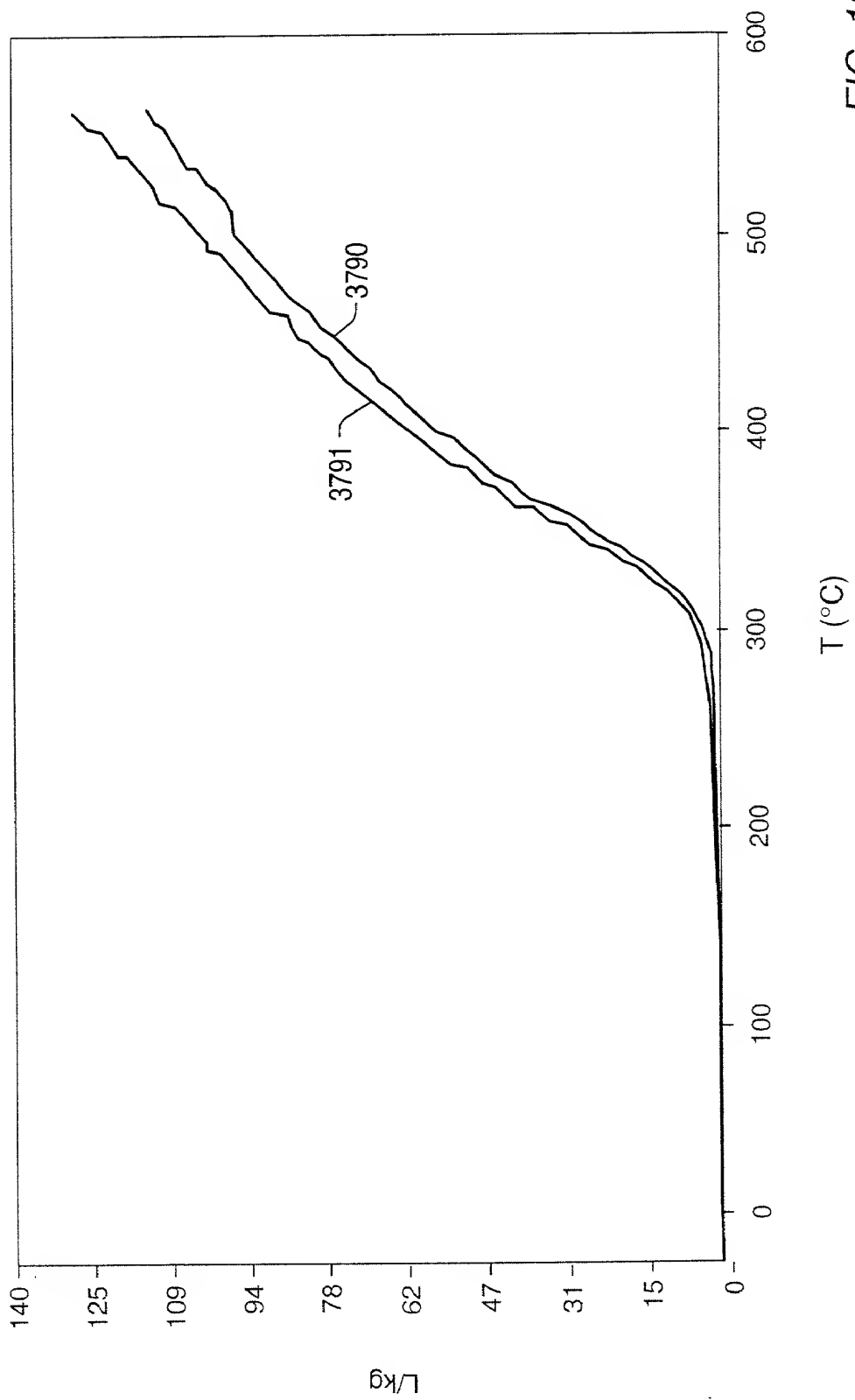


FIG. 132

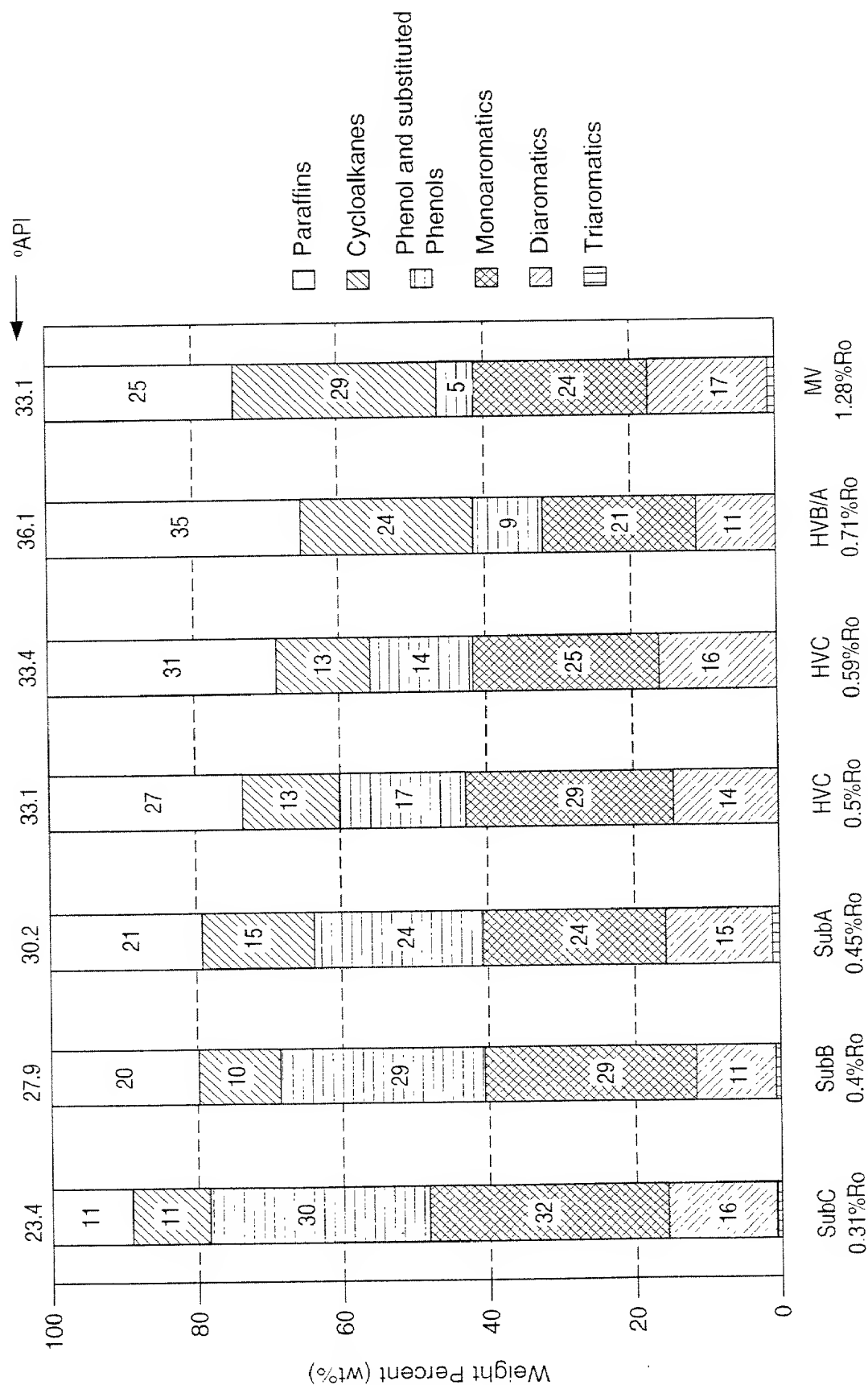


FIG. 134

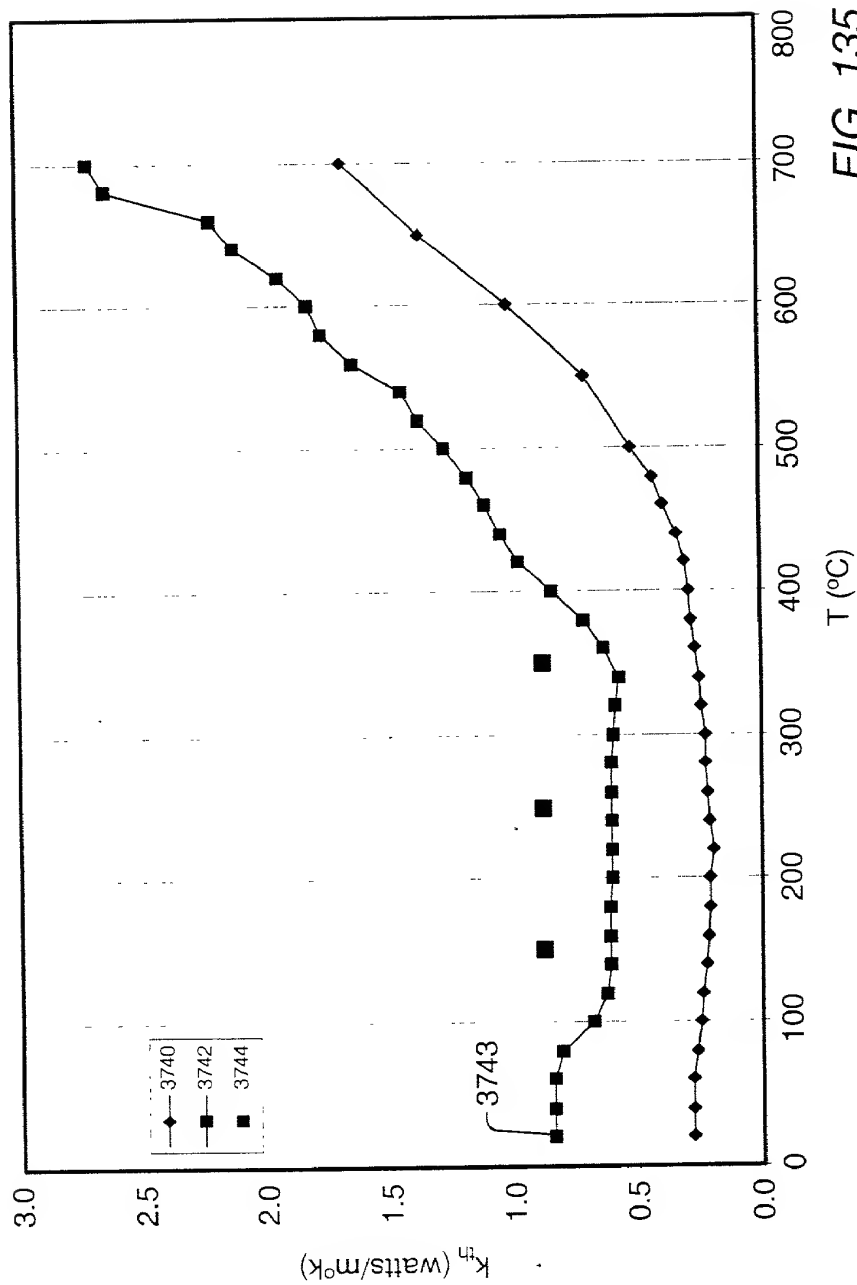


FIG. 135

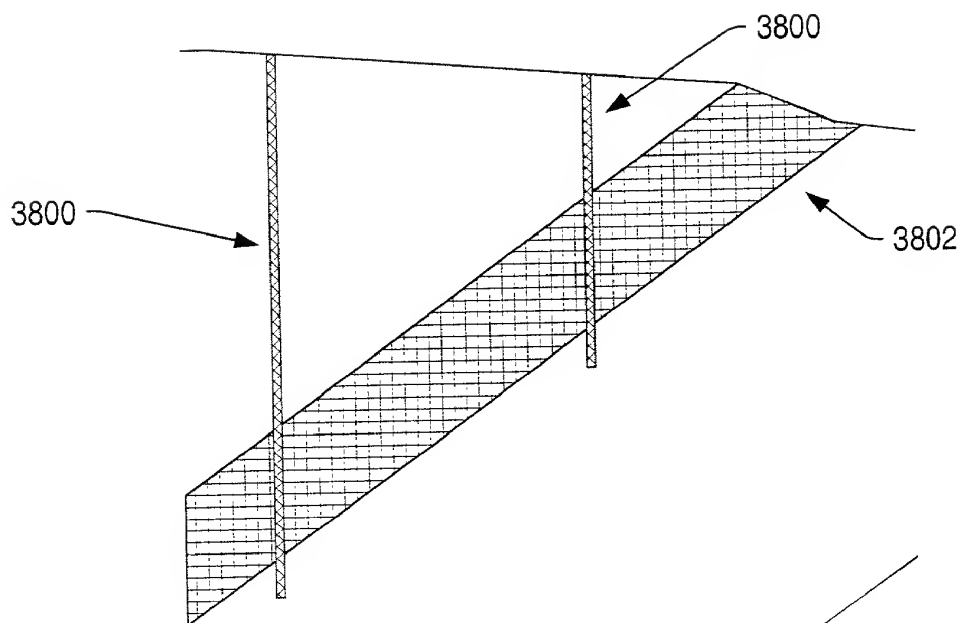


FIG. 136

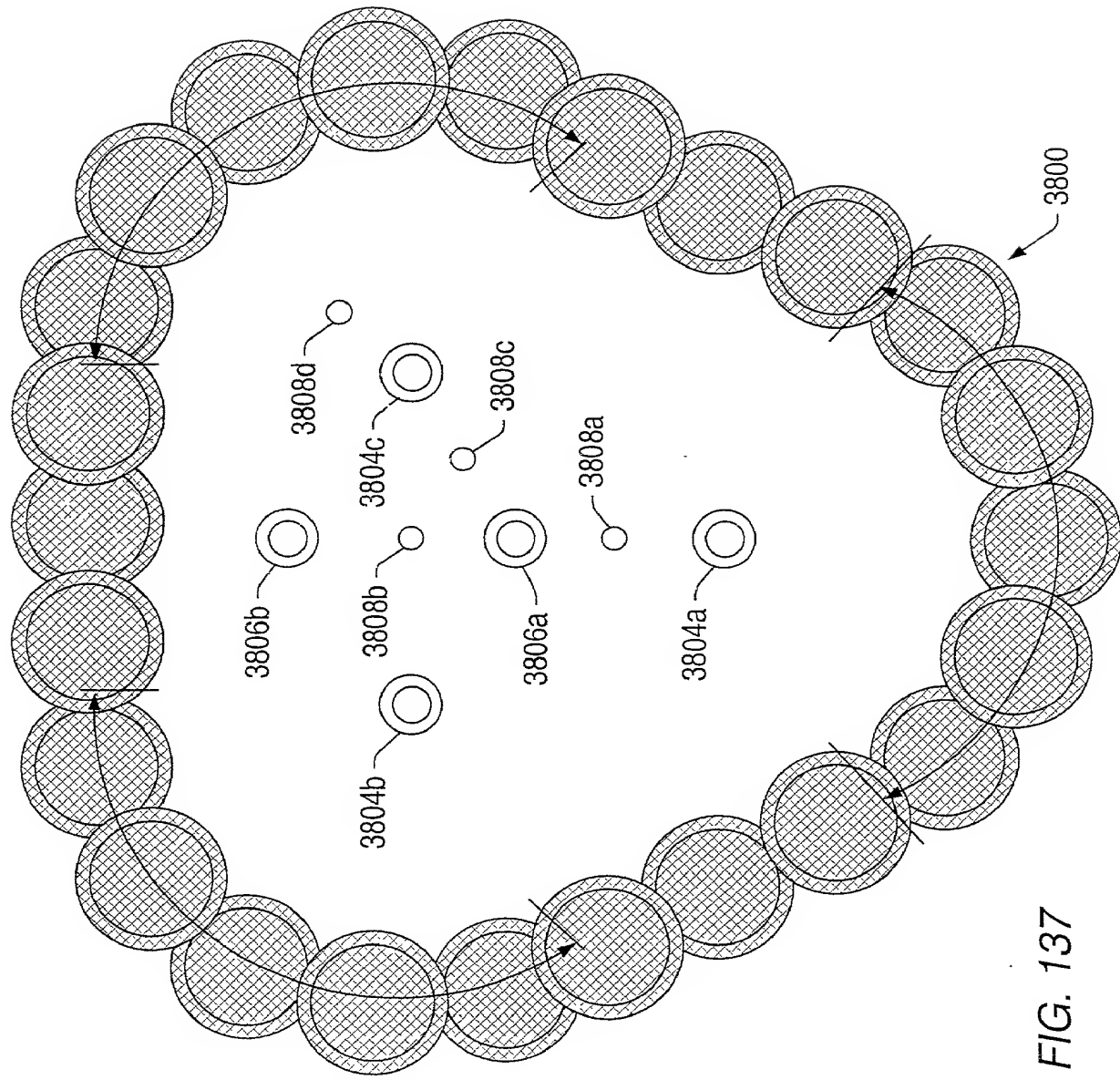
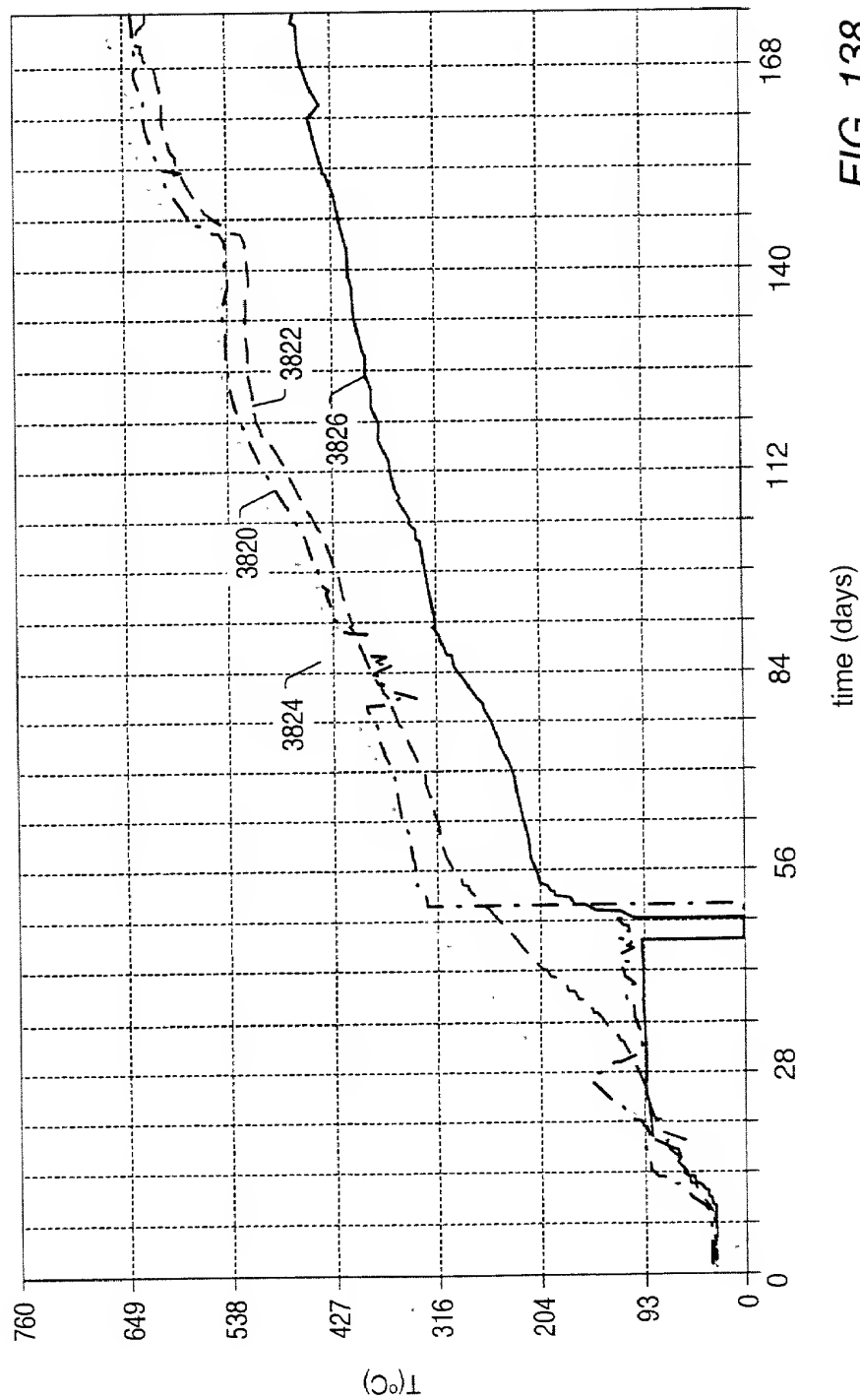


FIG. 137



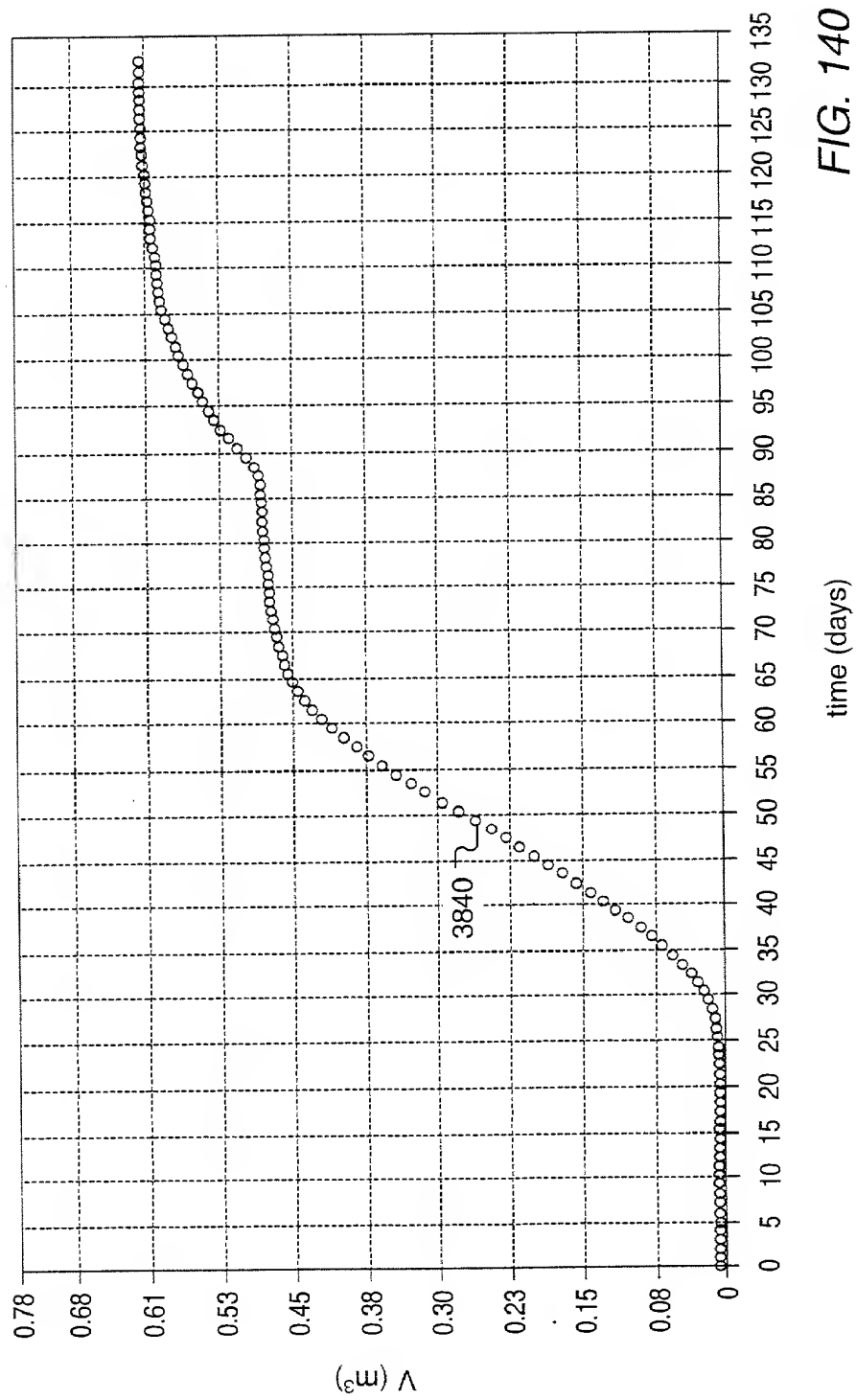


Figure 1 is a line graph with data points showing the relationship between the number of carbon atoms (C#) on the x-axis and the weight percentage of the polymer component (Wt %) on the y-axis. The x-axis ranges from 5 to 41, and the y-axis ranges from 0 to 11. The curve starts at approximately (5, 0.2), rises to a peak of about 10.2% at C# 13, then decreases to about 6.2% at C# 17, and continues to decrease sharply, reaching 0% at C# 41.

C#	Wt %
5	0.2
7	1.0
9	1.5
11	2.0
13	10.2
15	7.5
17	6.2
19	5.5
21	4.8
23	4.2
25	3.5
27	2.8
29	2.2
31	1.8
33	1.5
35	1.2
37	1.0
39	0.8
41	0.5

C#

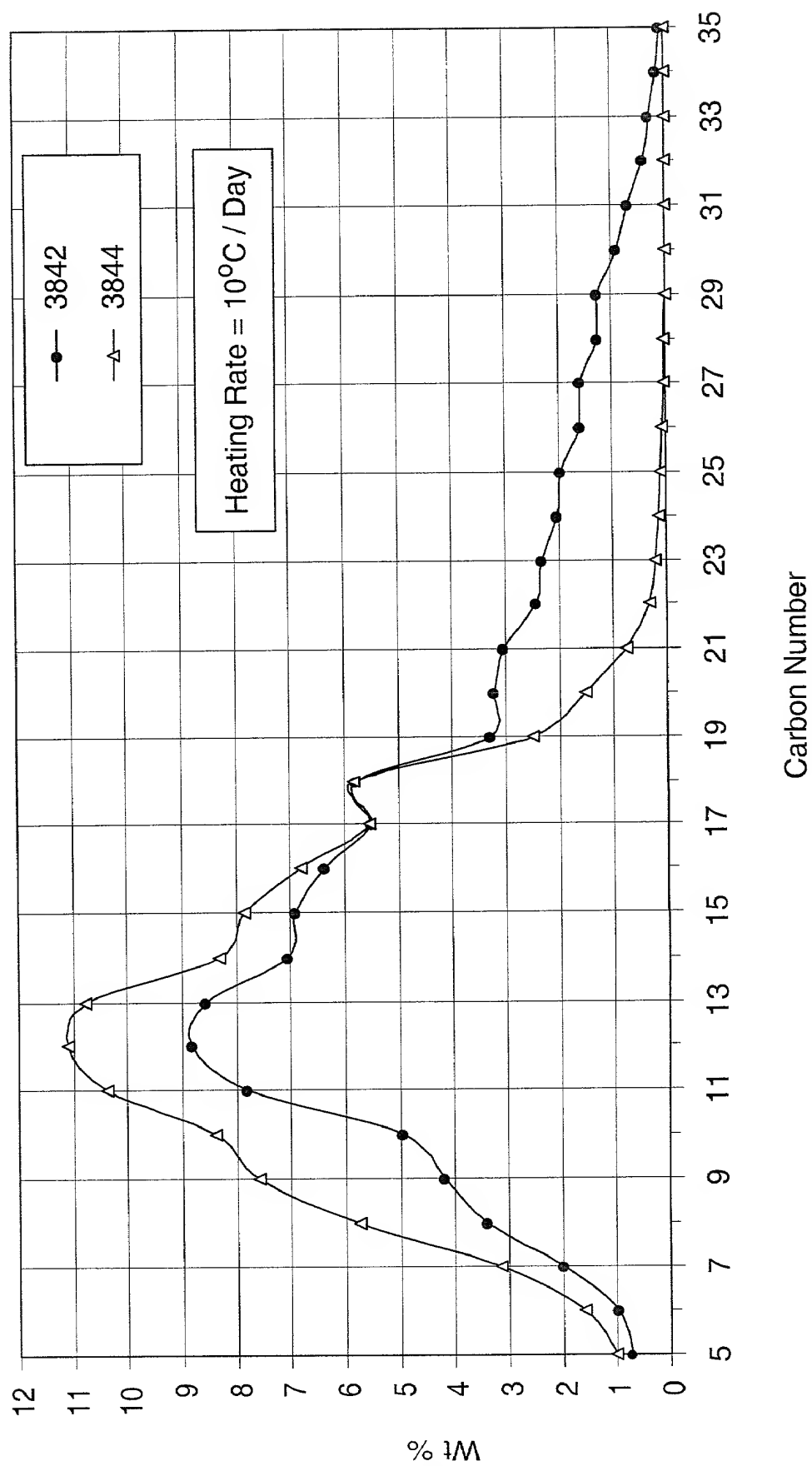


FIG. 142

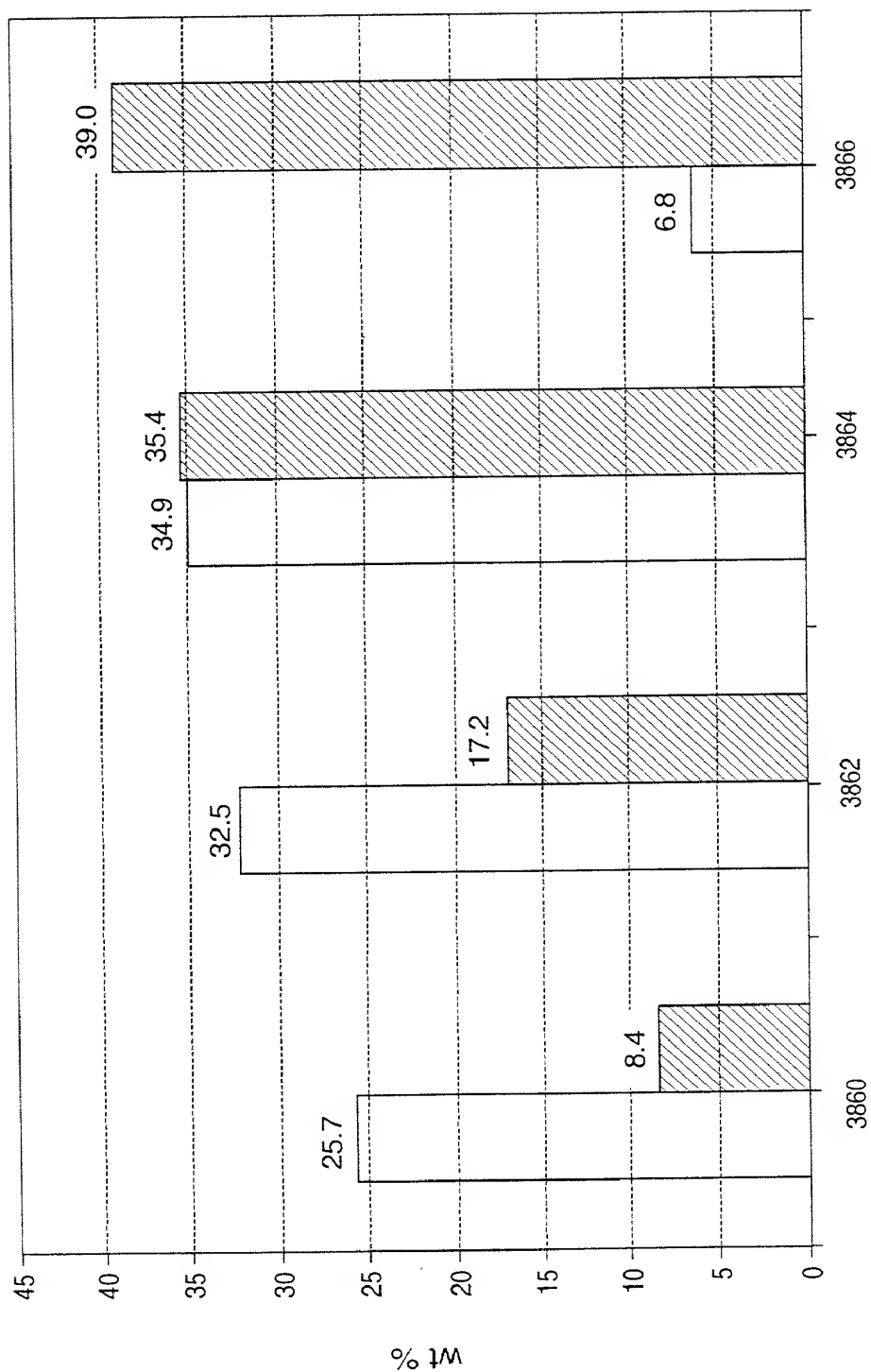


FIG. 143

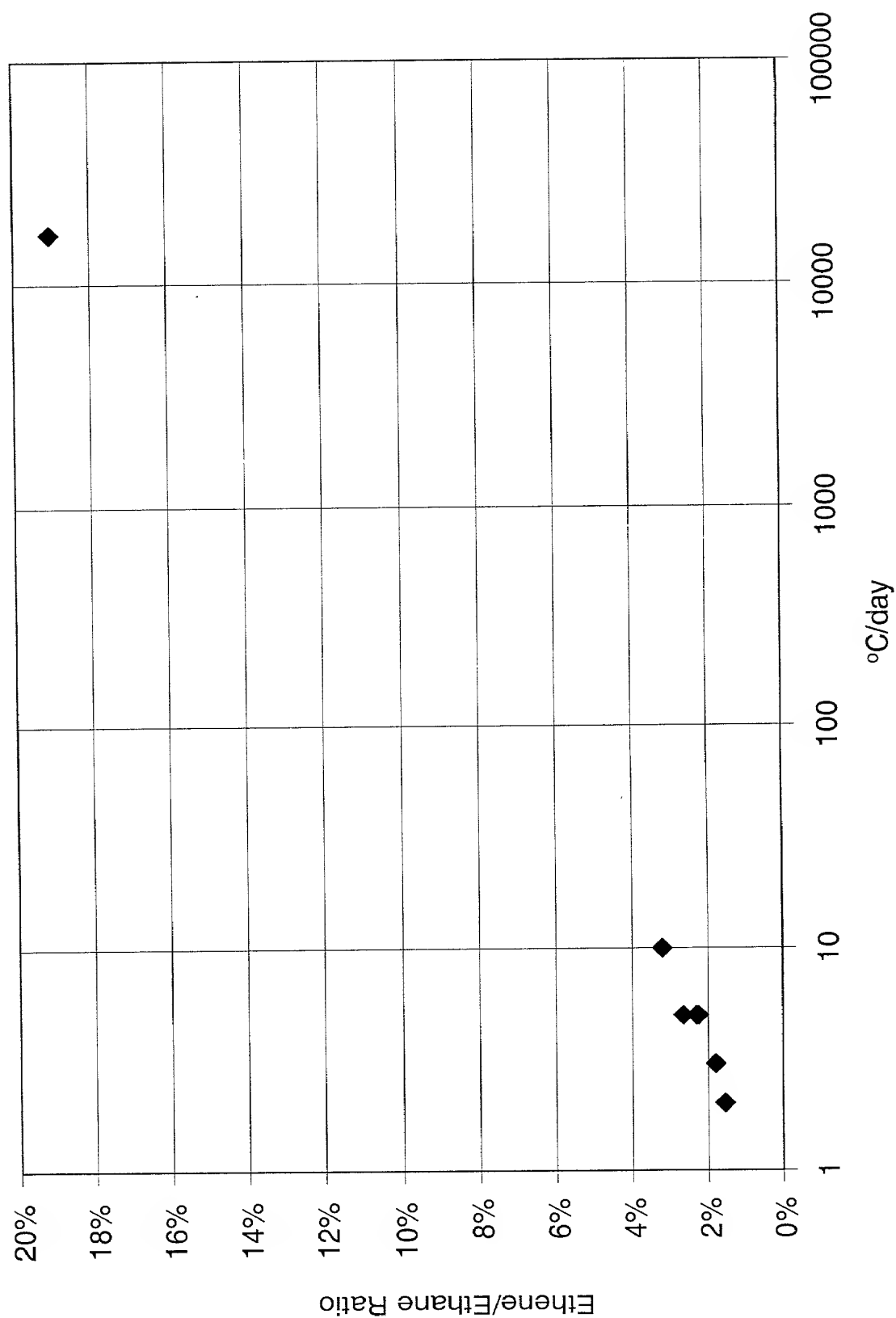


FIG. 144

API Gravity vs. Heating Rate at 1 bar absolute

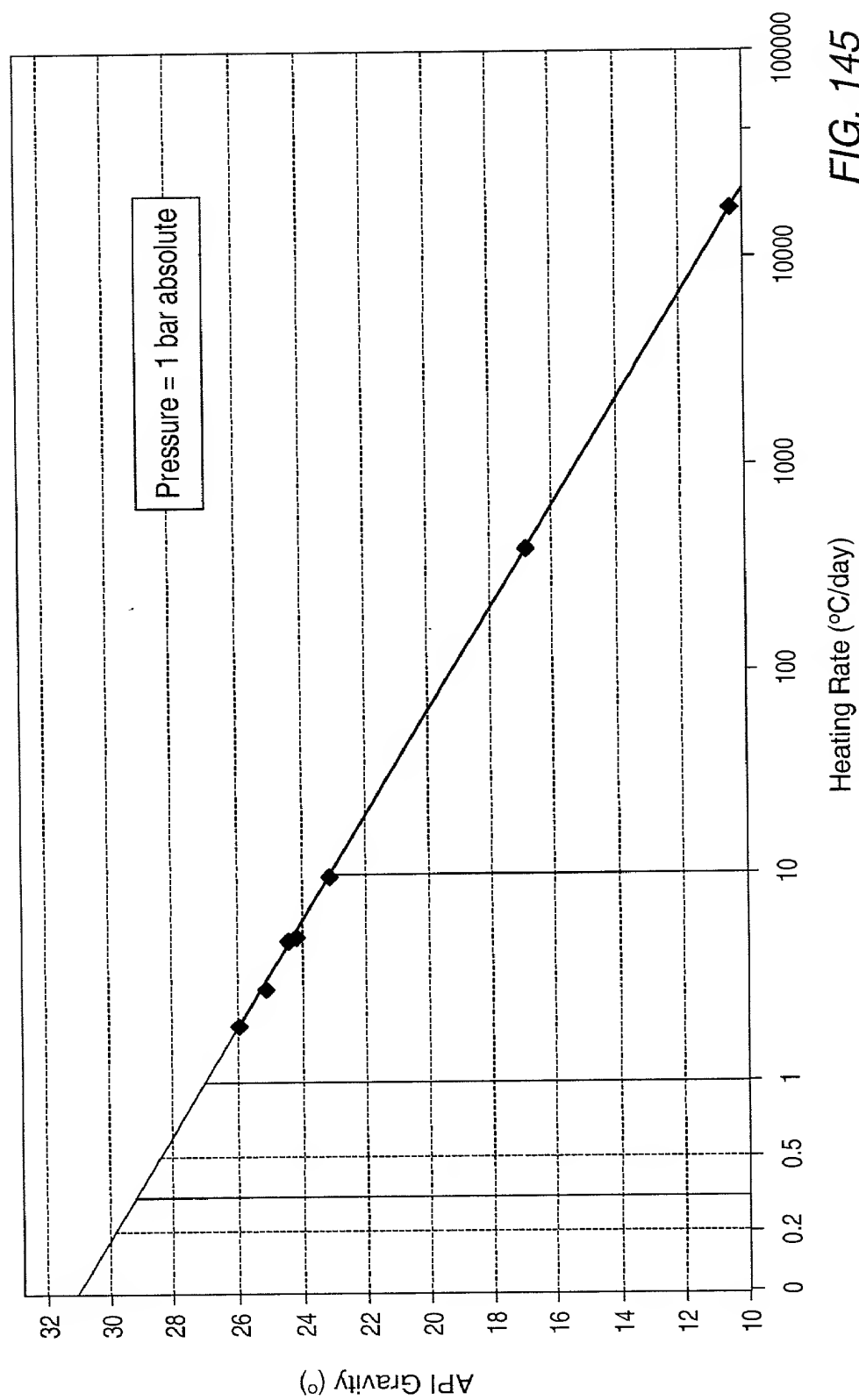


FIG. 145

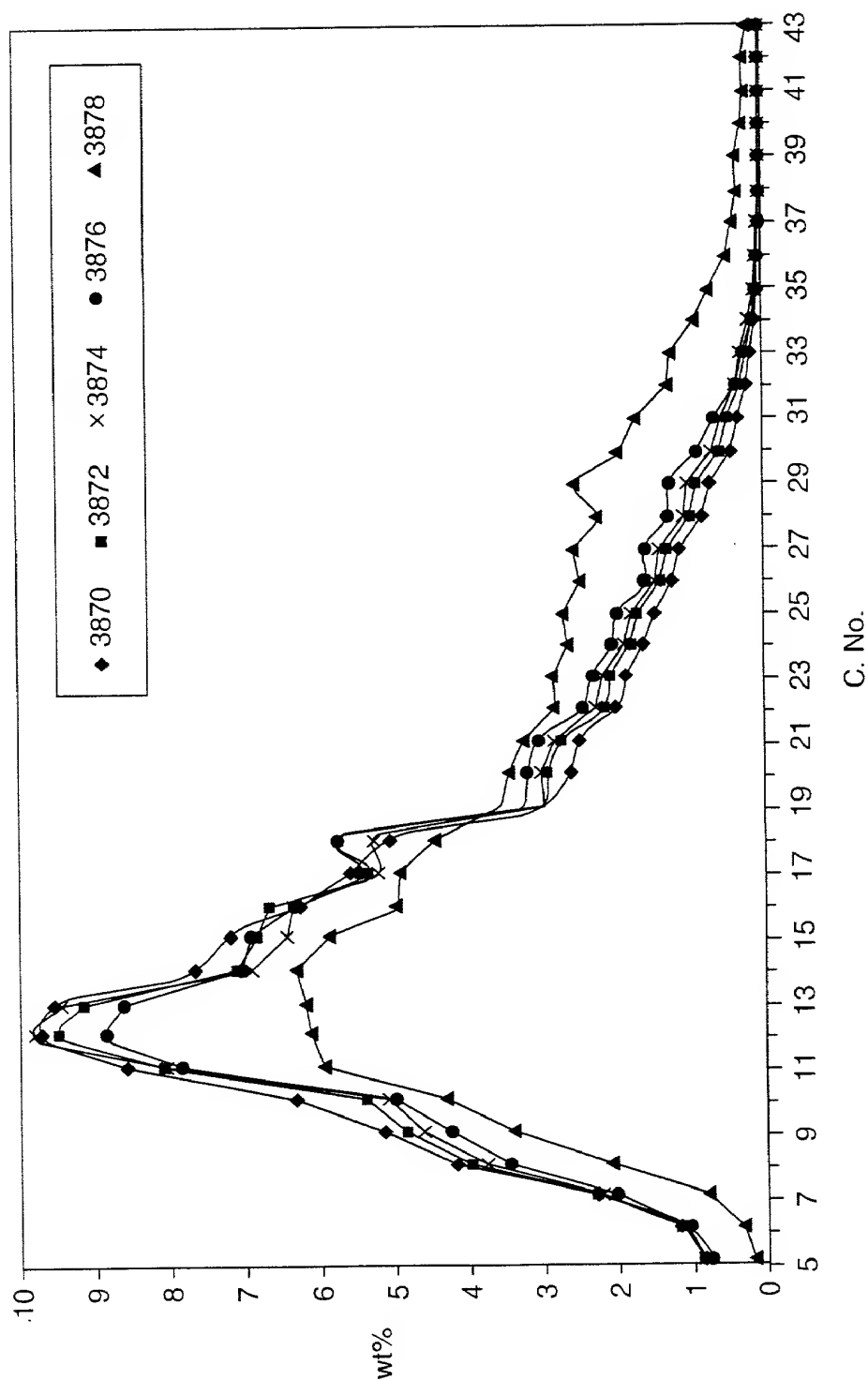


FIG. 146

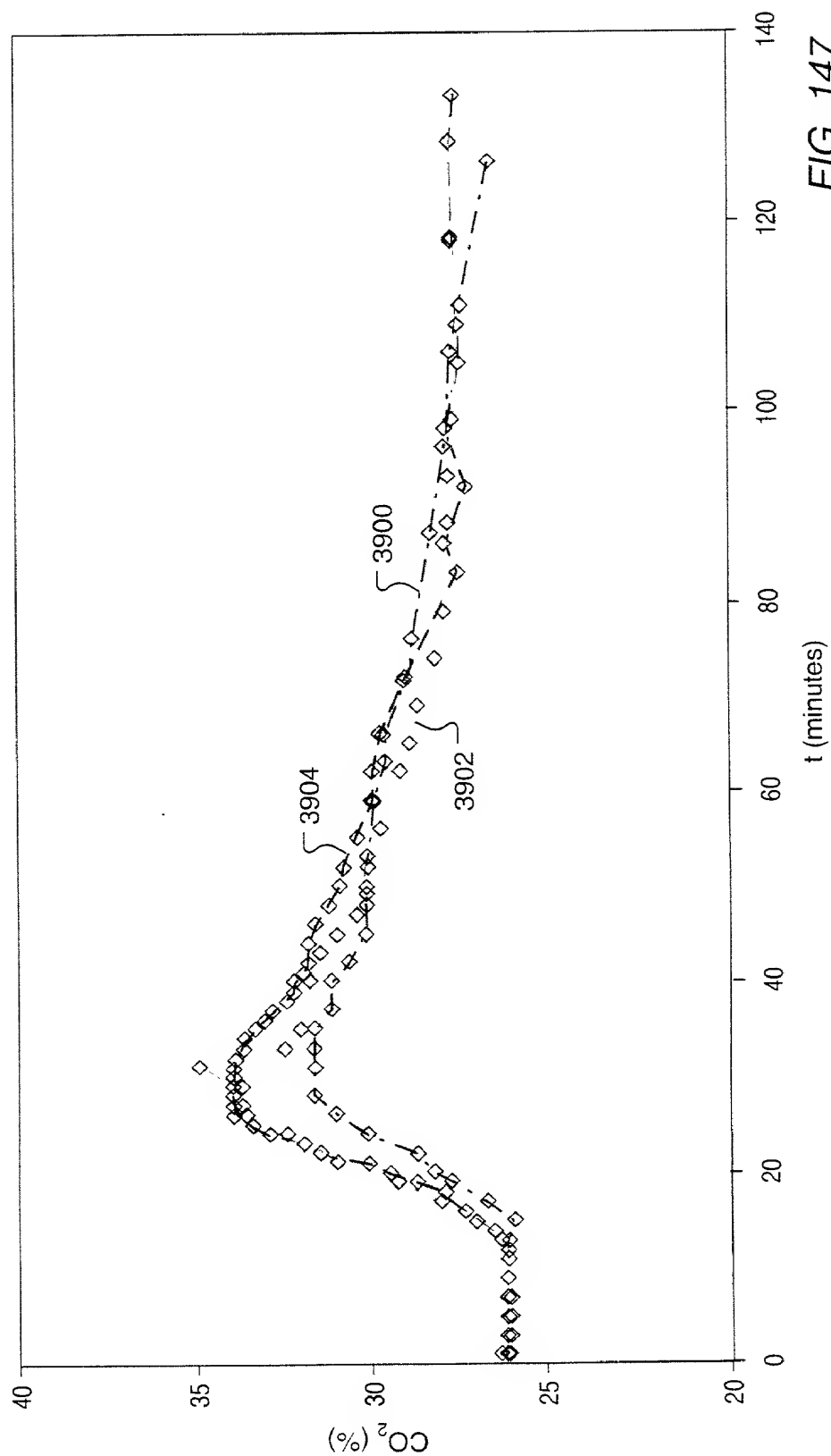


FIG. 147

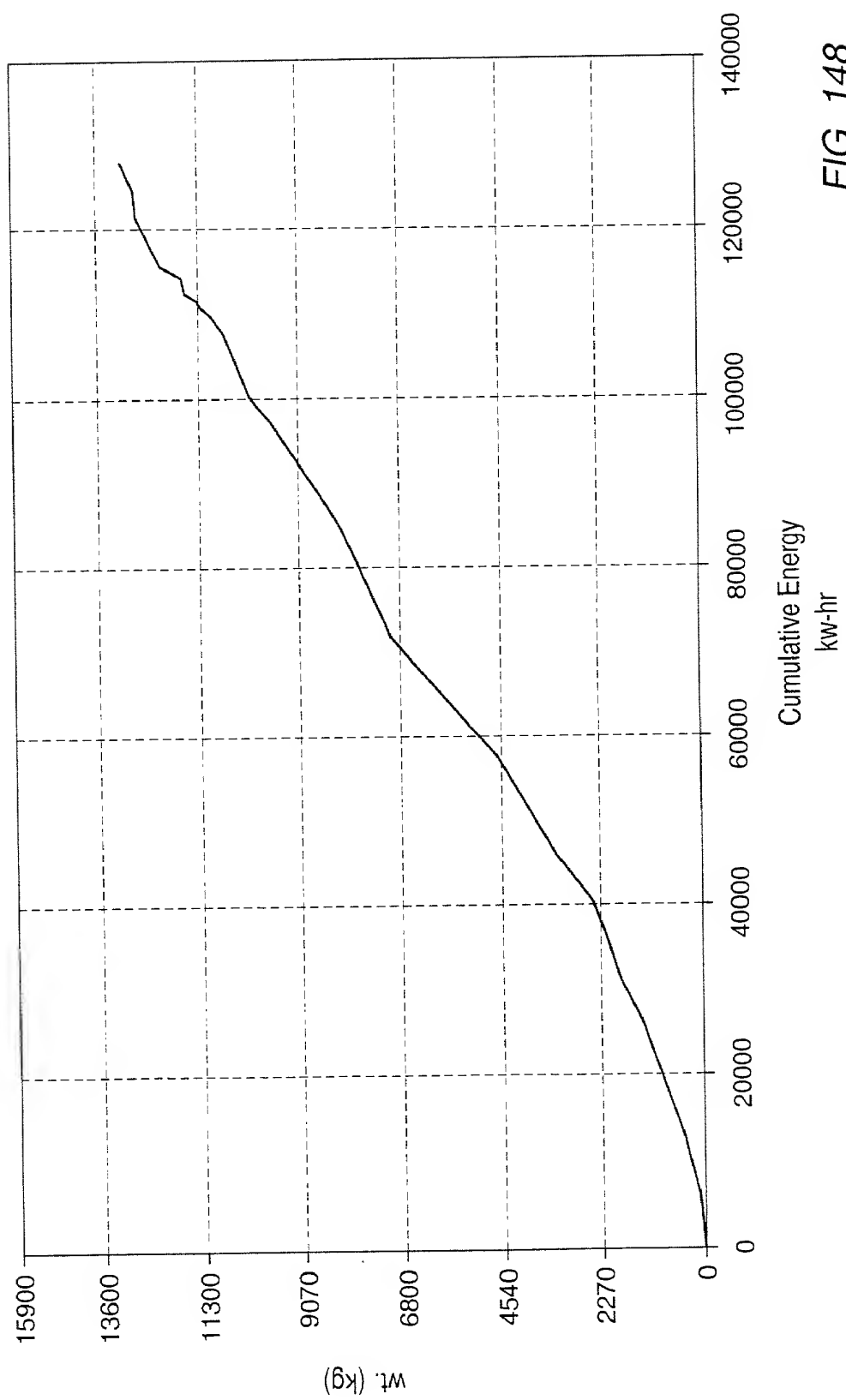
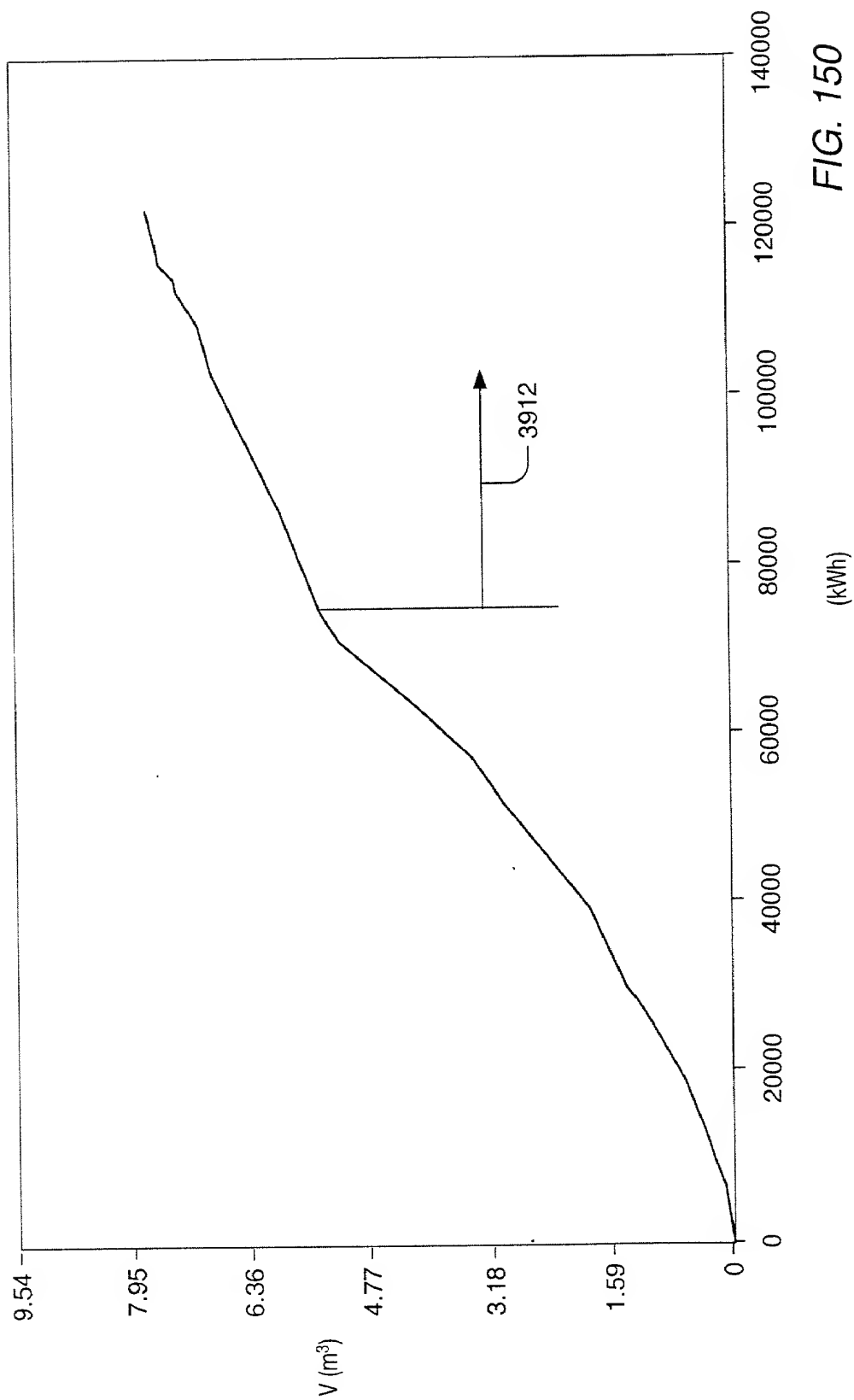


Figure 149 is a graph showing the variation of volume V (in m^3) versus time t (in days). The x-axis represents time t from 0 to 135 days, and the y-axis represents volume V from 0 to 8495.1 m^3 . The curve shows a sigmoidal growth pattern, starting near zero and increasing rapidly between $t=40$ and $t=80$ days, eventually leveling off. A horizontal line is drawn at $V=3910$ m^3 , and a vertical line is drawn at $t=75$ days, intersecting the curve. The label '3910' is placed near the intersection point.

t (days)

FIG. 150



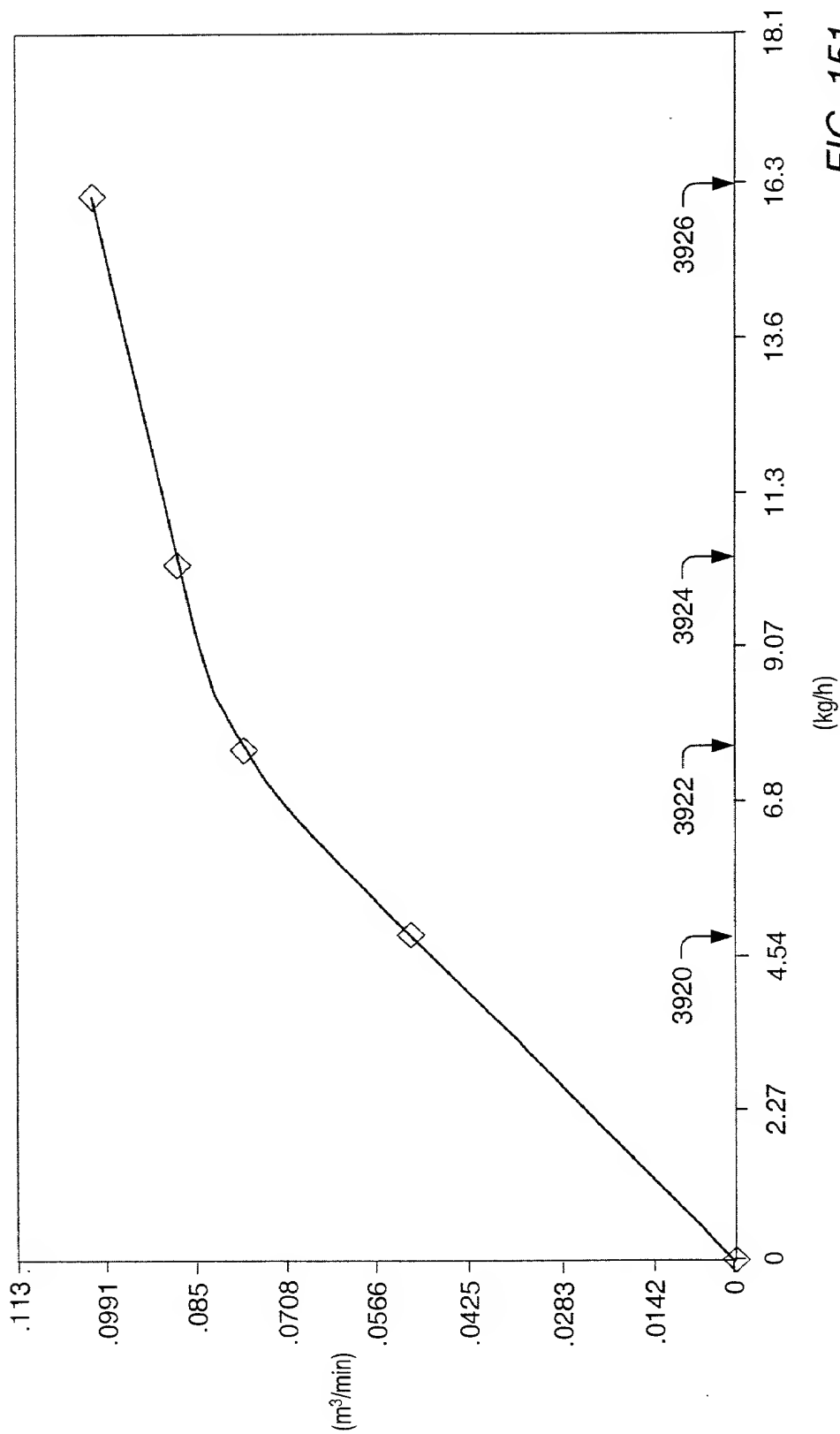


FIG. 151

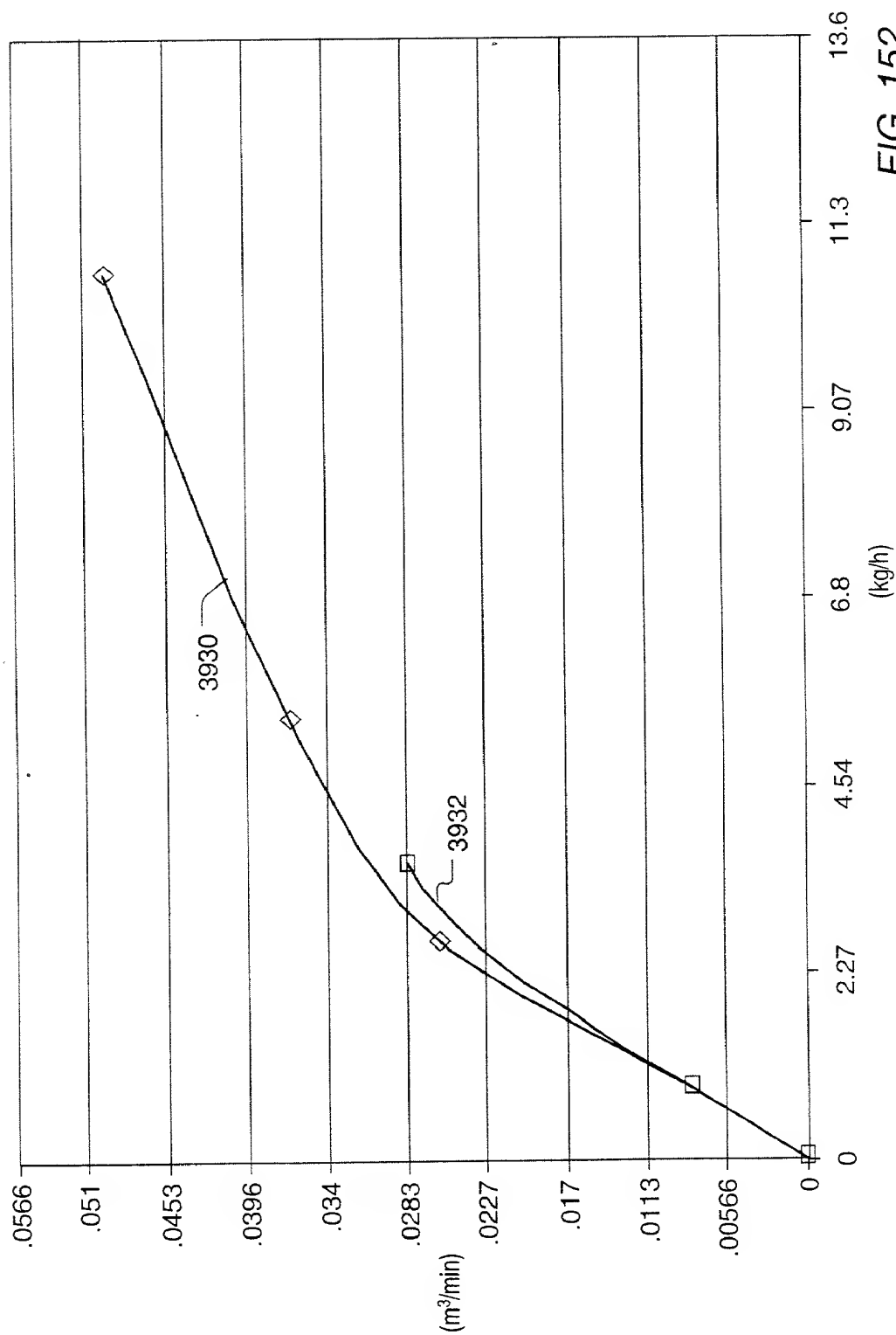


FIG. 152

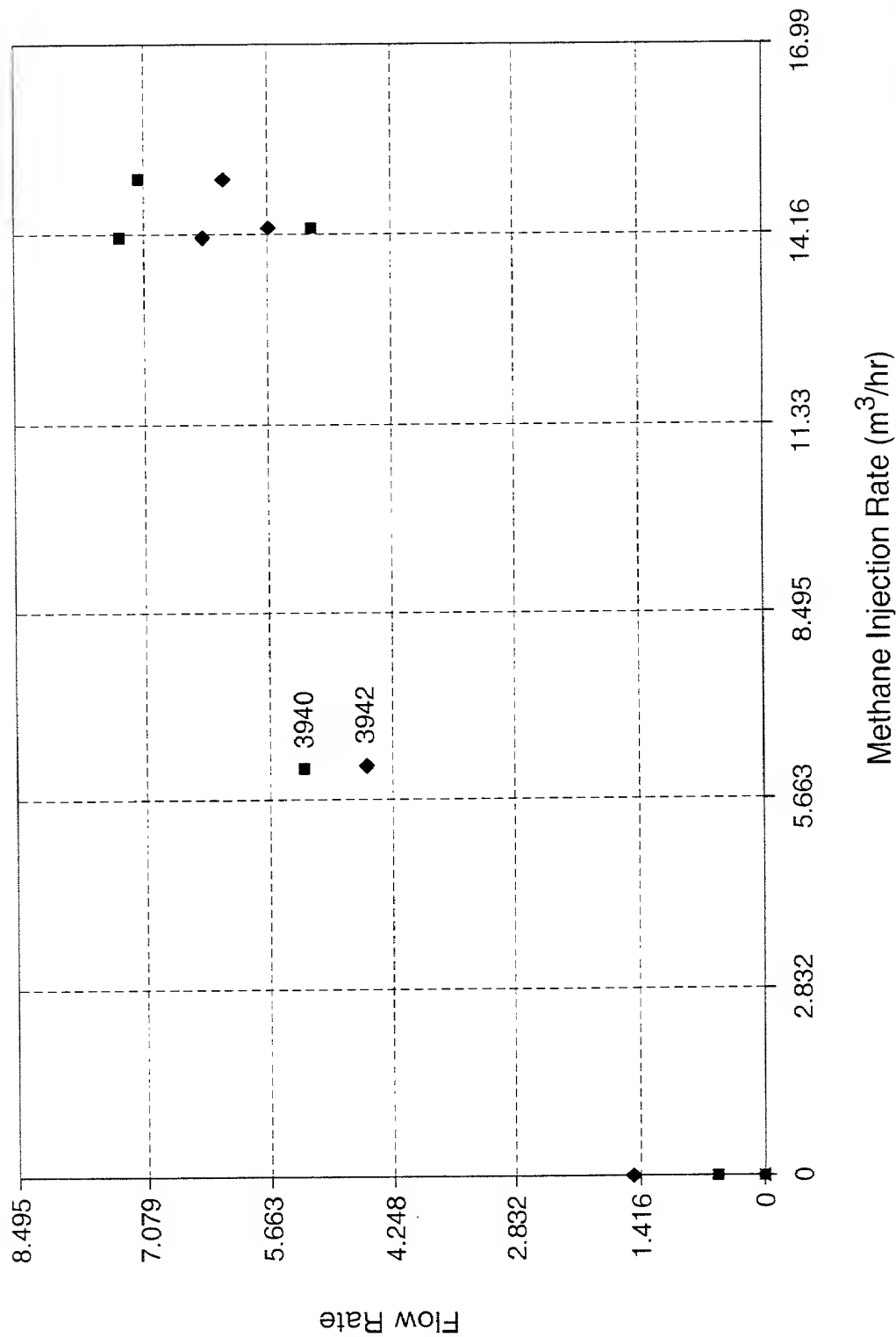


FIG. 153

11.33 9.911 8.495 7.079 5.663 4.248 2.832 1.416 0
 0 1.416 2.832 4.248 5.663 7.079 8.495 9.911 11.33
 0 1.416 2.832 4.248 5.663 7.079 8.495 9.911 11.33

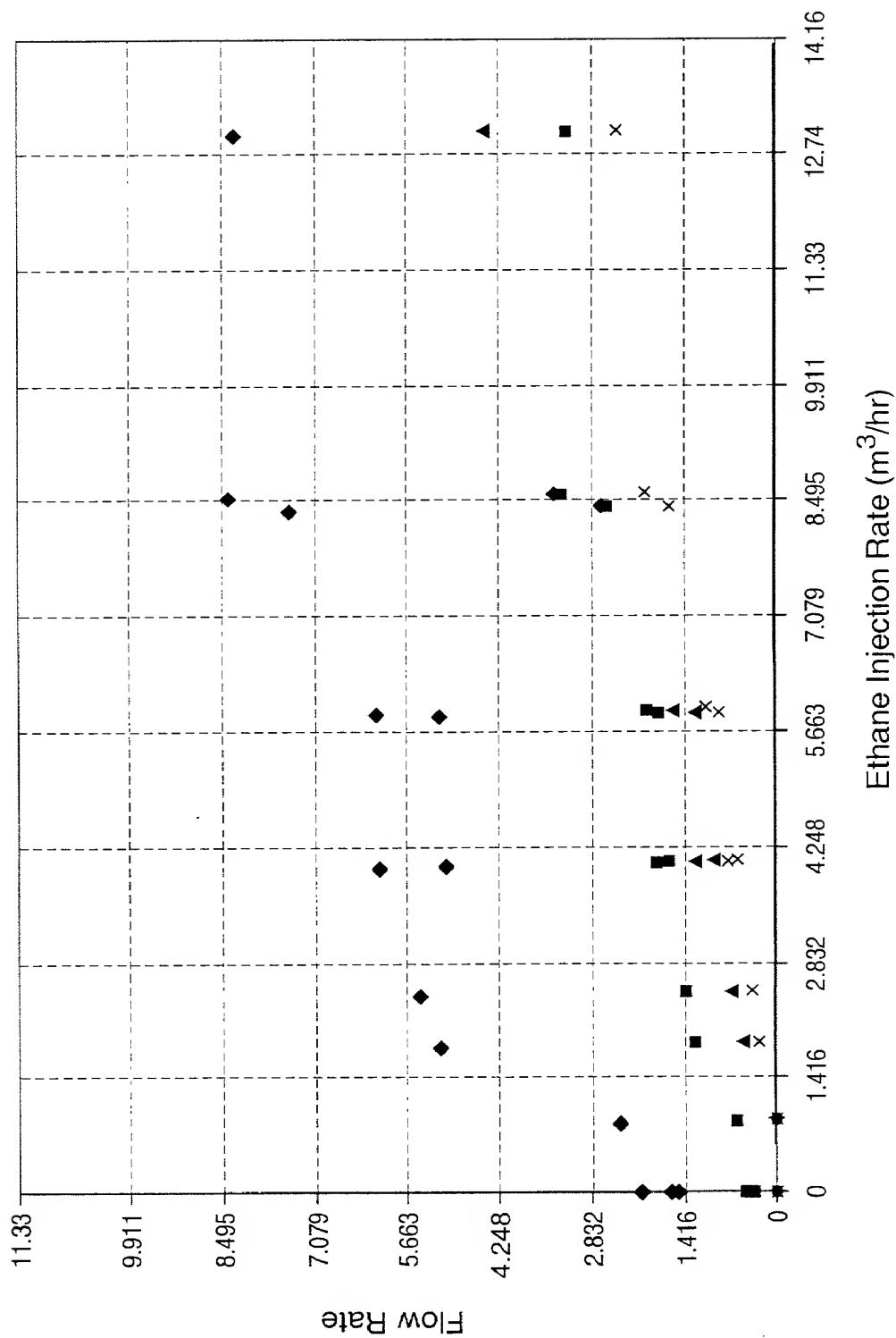


FIG. 154

3960 3962 3964 3966 3968 3969
 3960 3962 3964 3966 3968 3969
 3960 3962 3964 3966 3968 3969

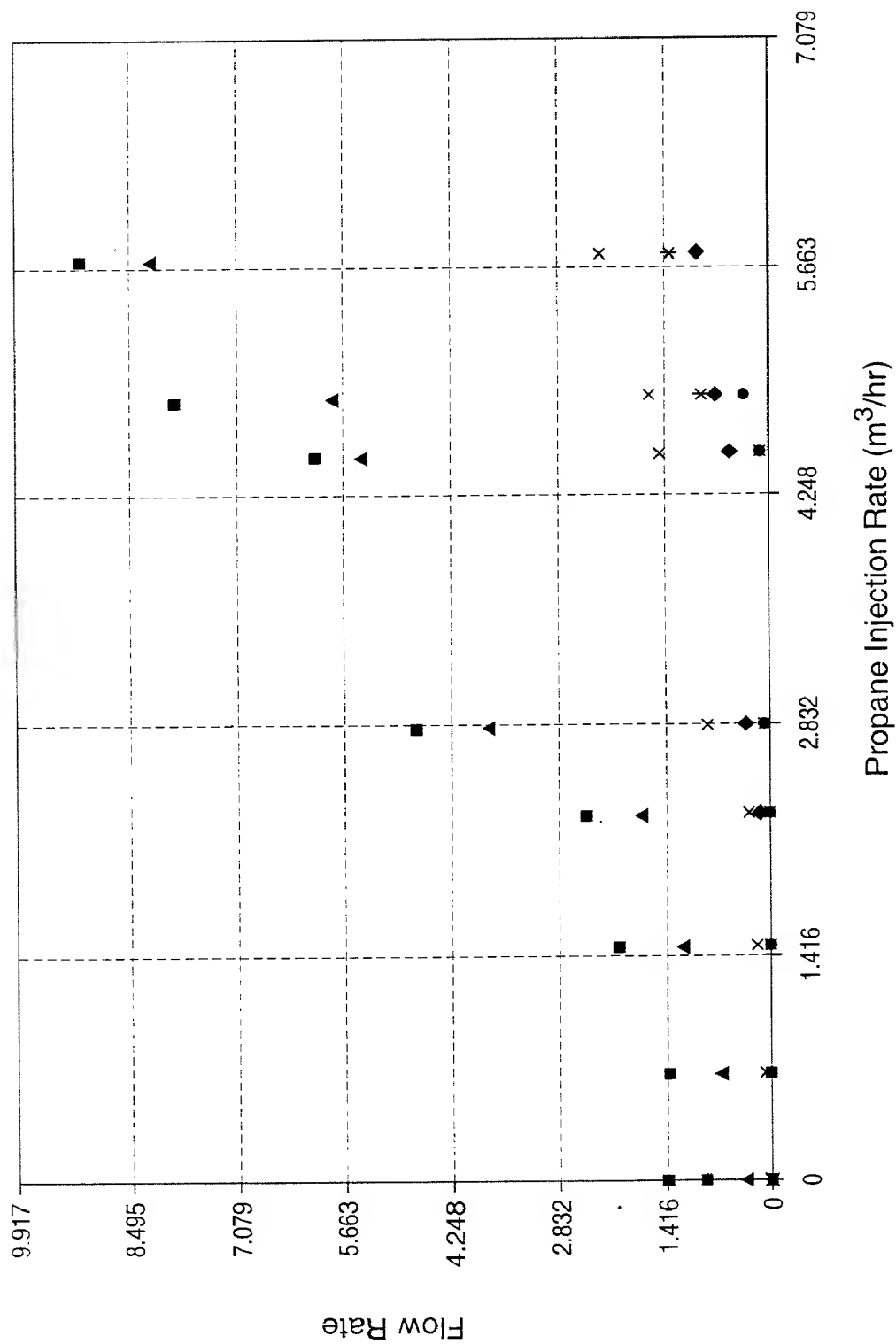
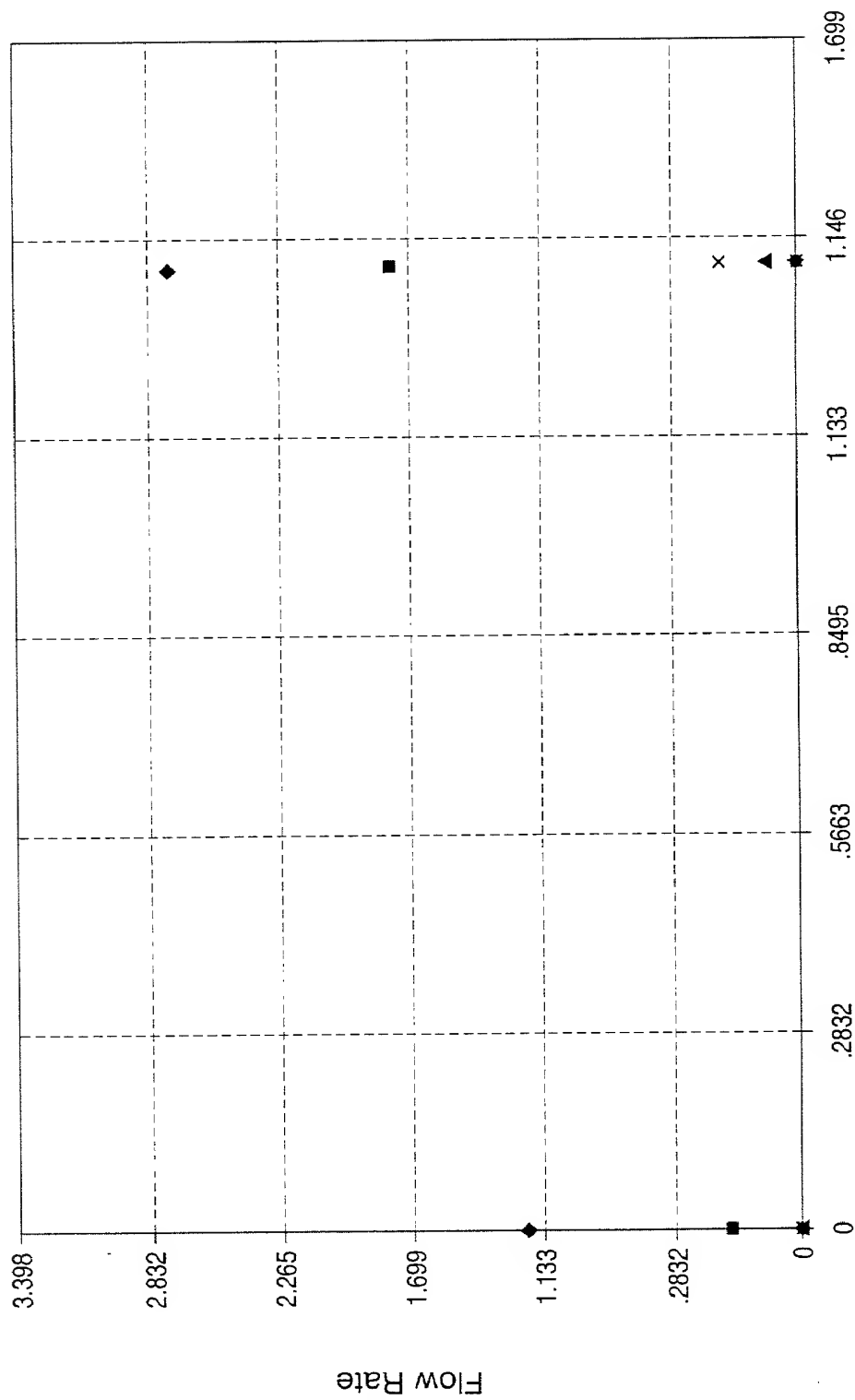


FIG. 155



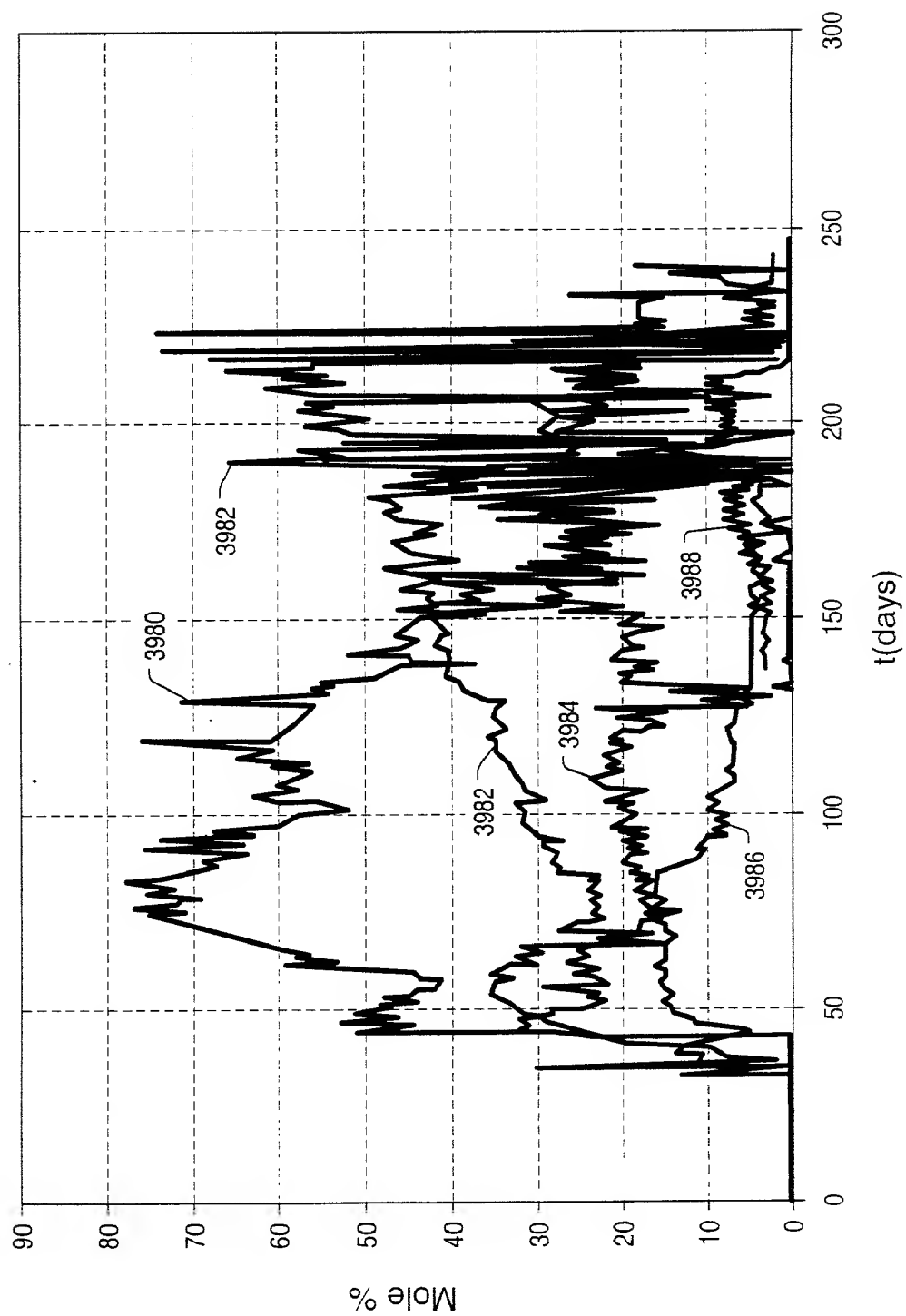


FIG. 157

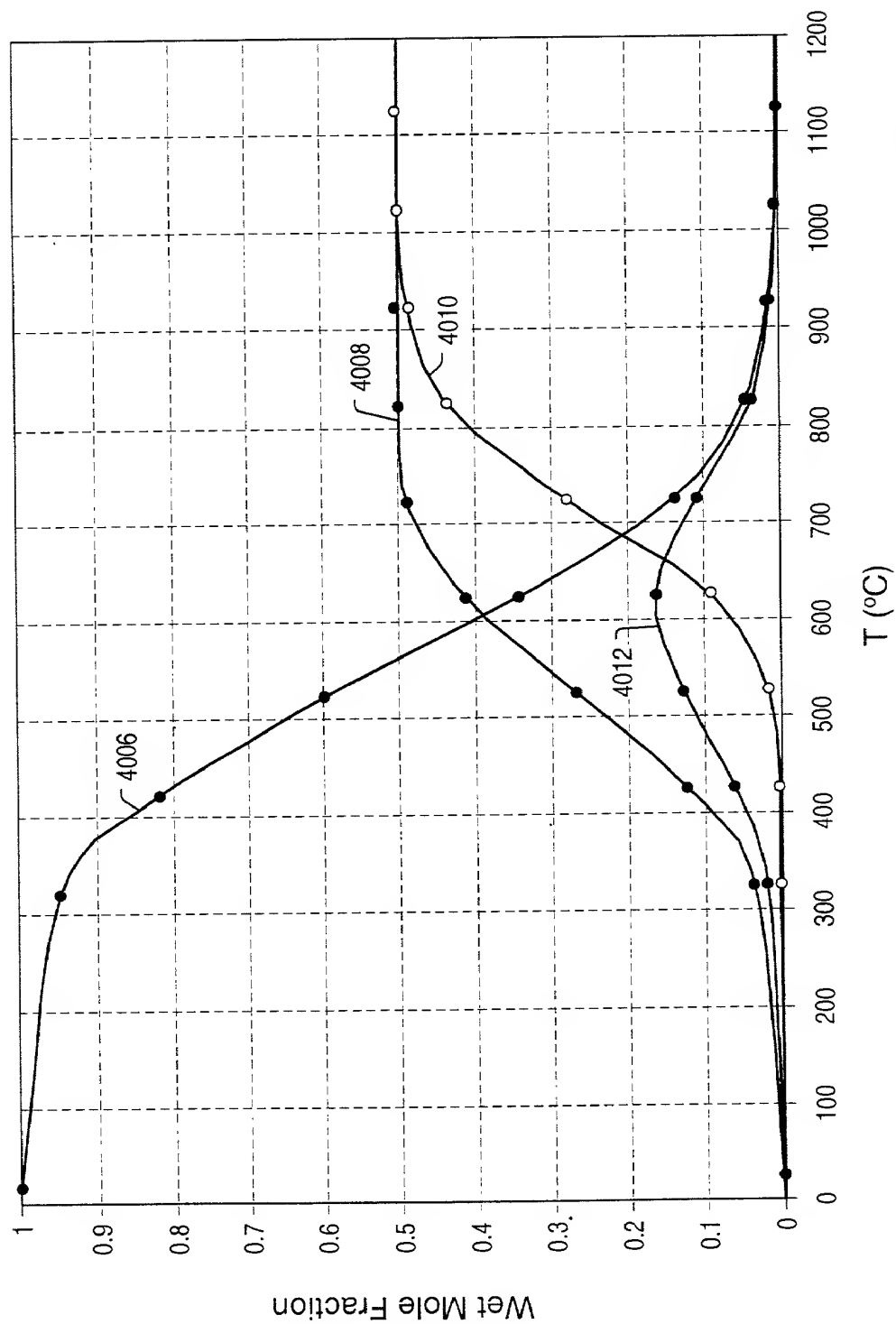


FIG. 160

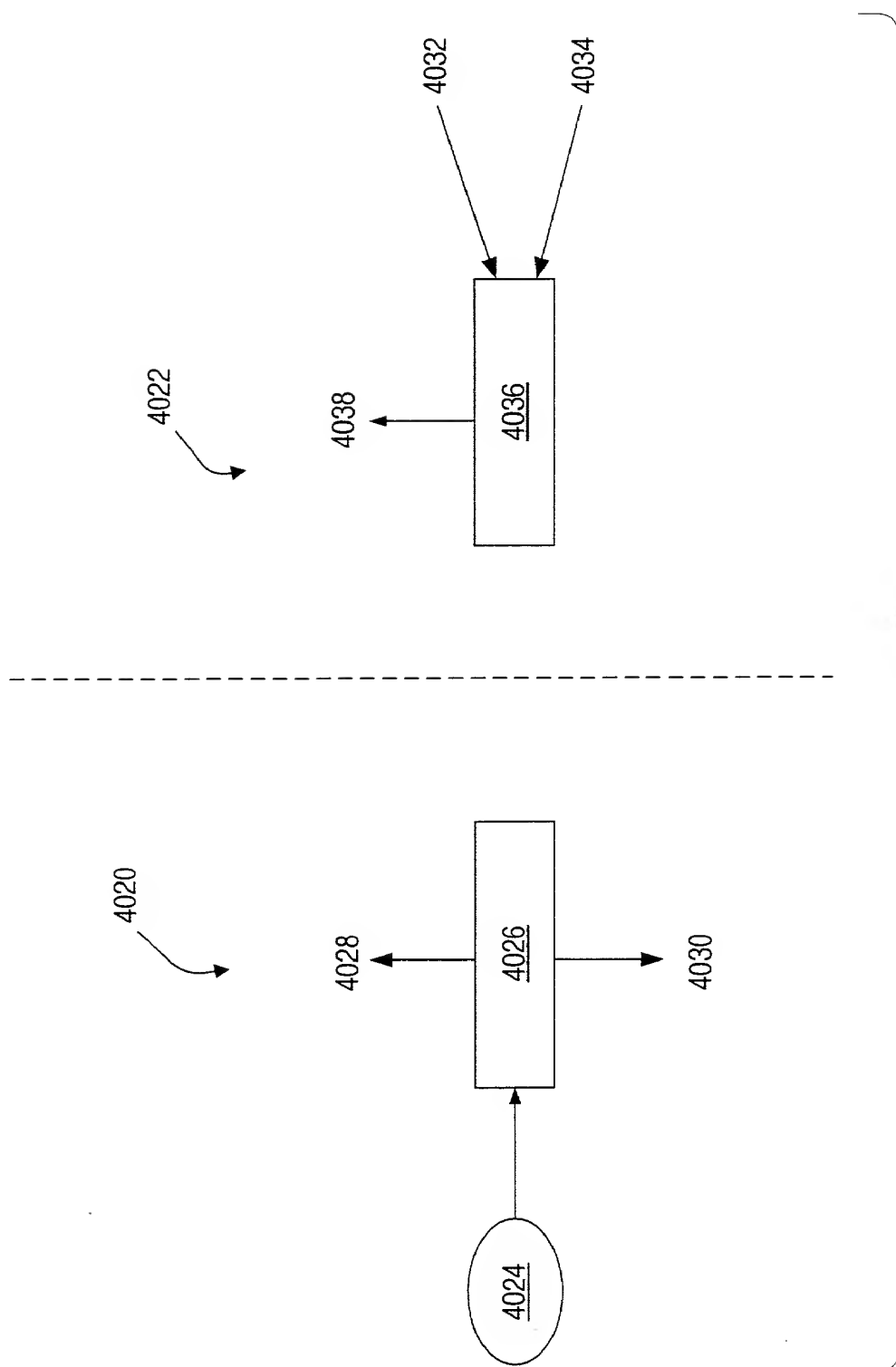


FIG. 161

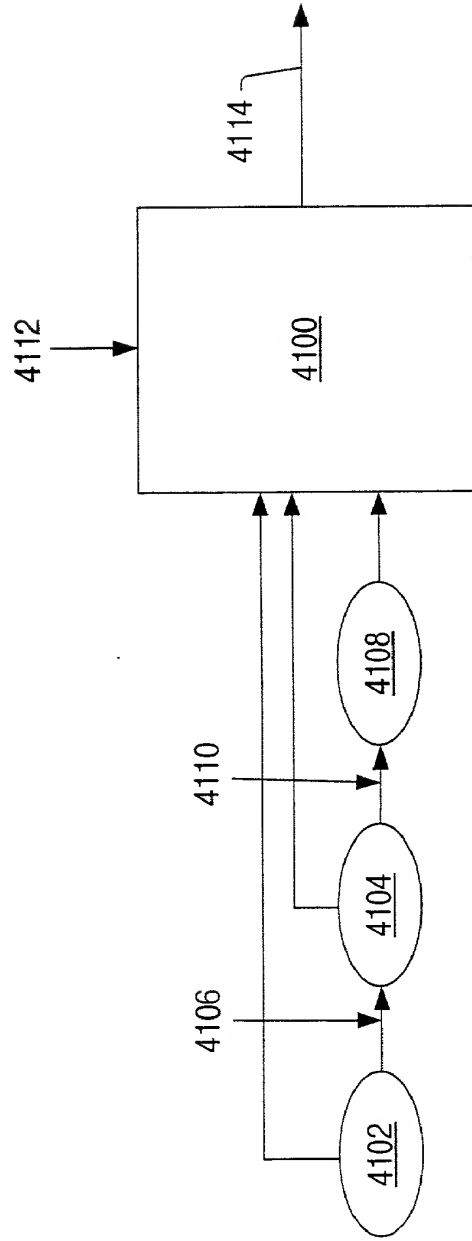


FIG. 162

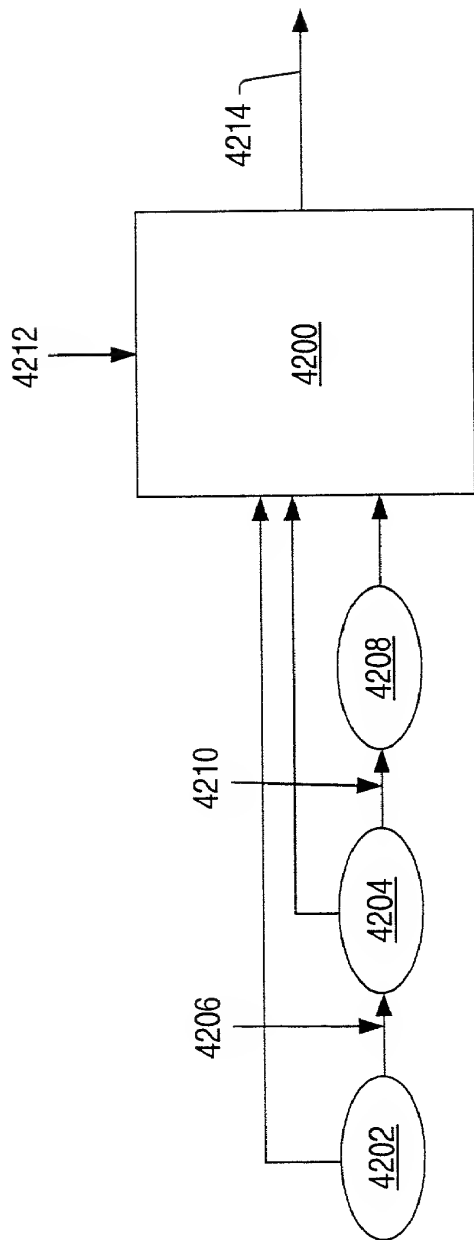


FIG. 163

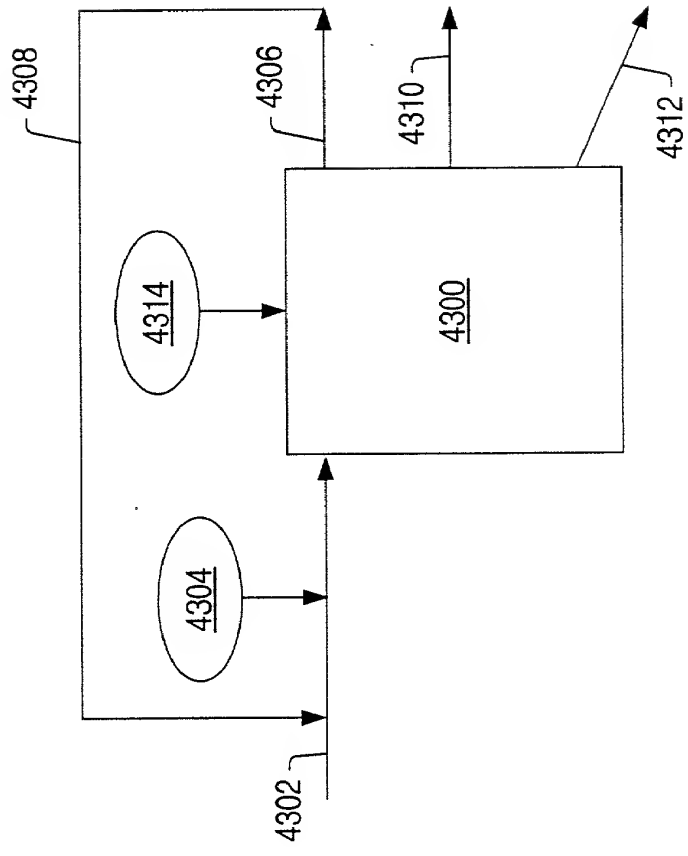
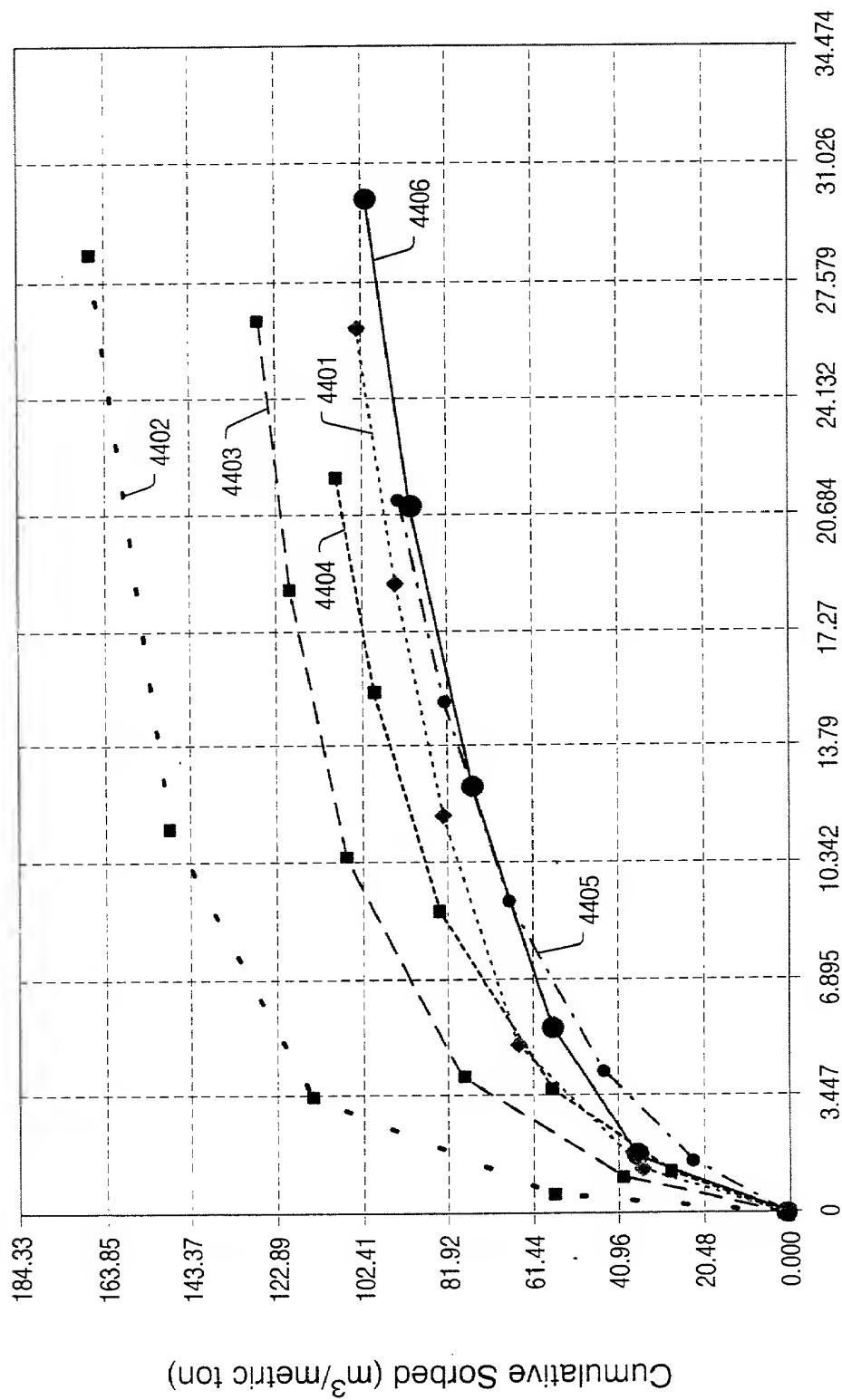


FIG. 164

1000 900 800 700 600 500 400 300 200 100 0
 100 90 80 70 60 50 40 30 20 10 0
 100 90 80 70 60 50 40 30 20 10 0



Pressure (bars absolute)

FIG. 165

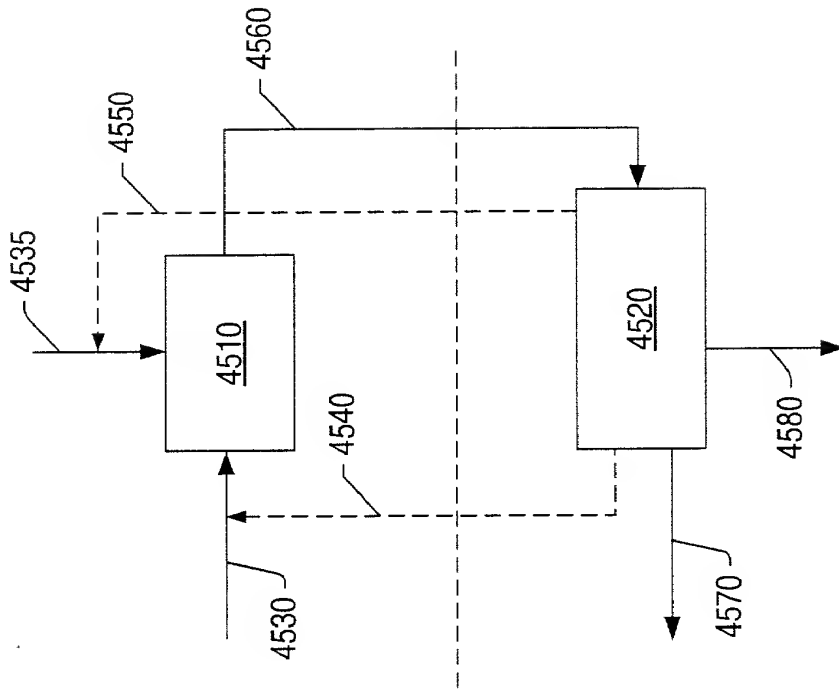


FIG. 166

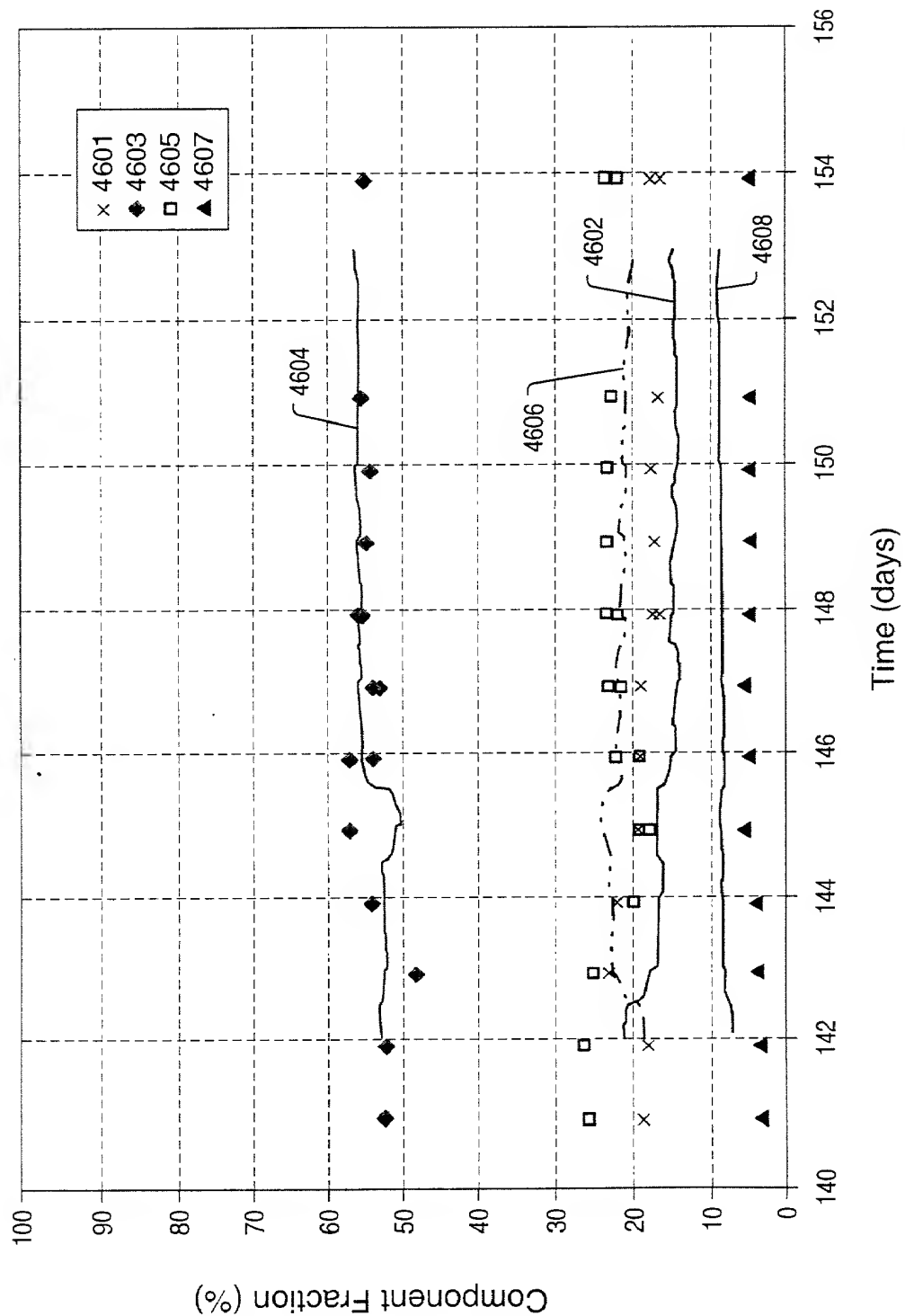


FIG. 167

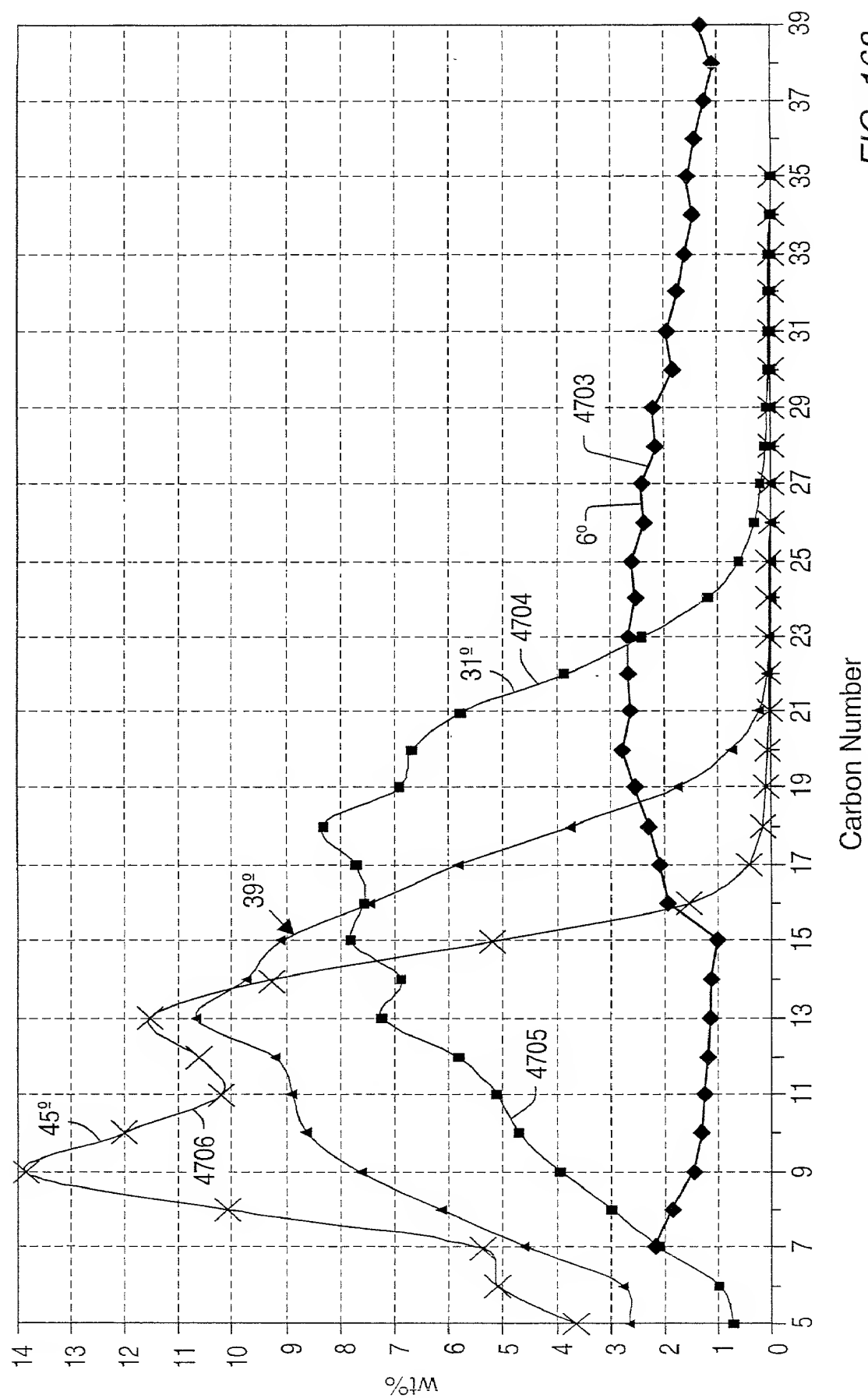


FIG. 168



4714

4712

4710

FIG. 170

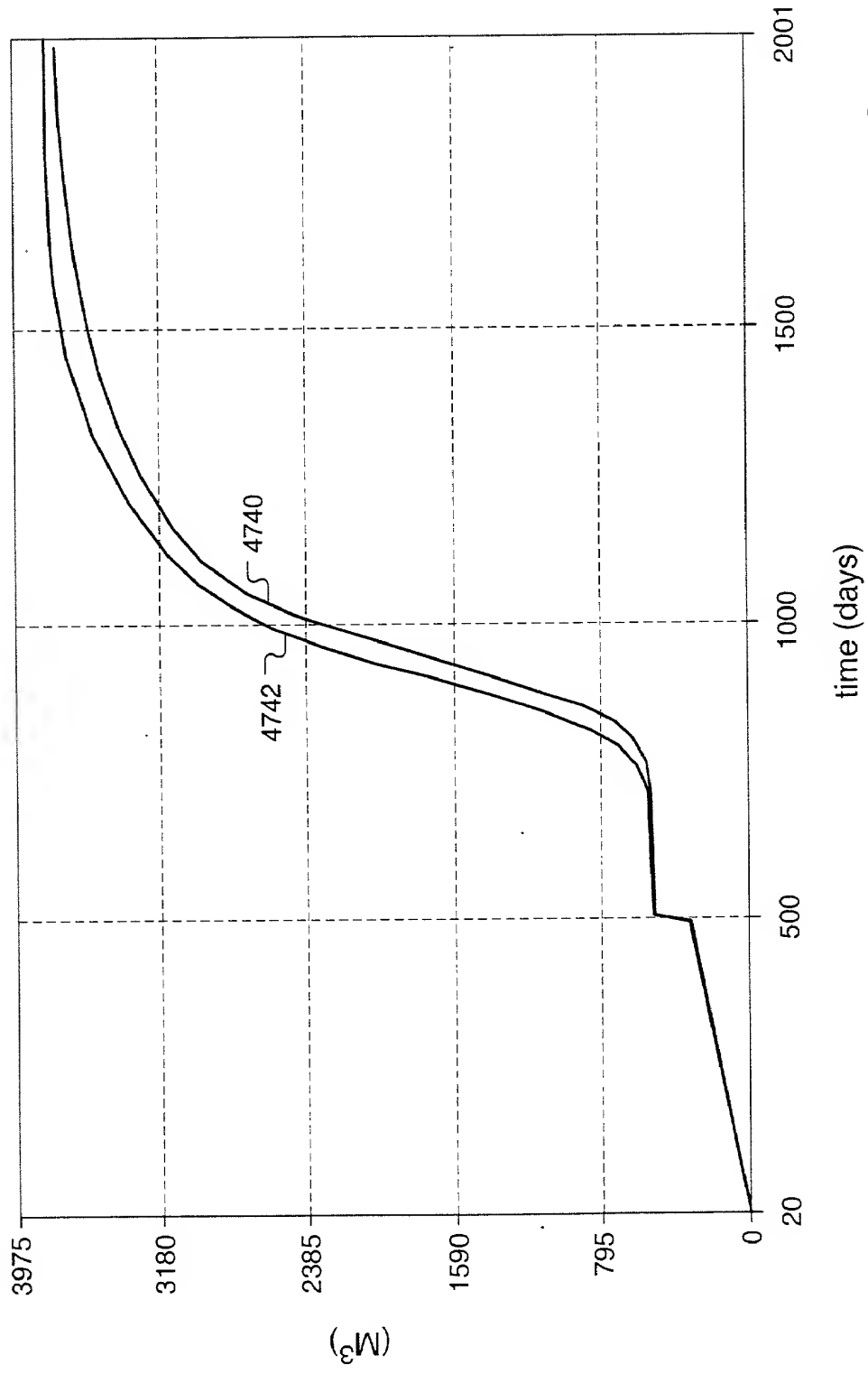


FIG. 170

FIG. 171 is a graph showing the ratio of the concentration of the component in the gas phase to the concentration of the component in the liquid phase as a function of time for a system in which the component is initially in the liquid phase and the system is at equilibrium. The ratio is plotted on the y-axis and time in days is plotted on the x-axis. The ratio starts at 0 at time 0 and increases to a value of approximately 6.5 at 1000 days, then decreases to a value of approximately 1.5 at 3000 days. The curve is labeled 4750.

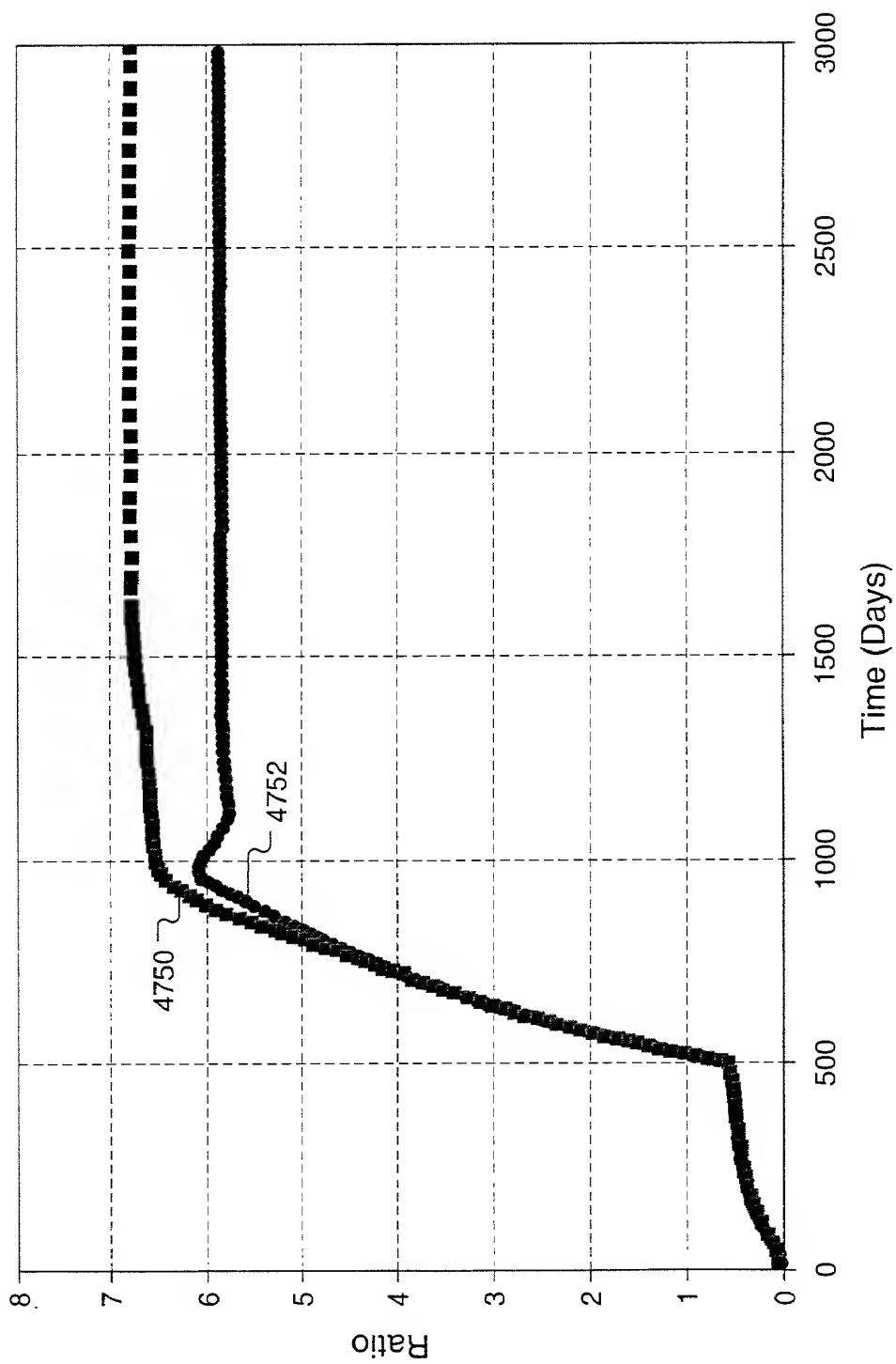


FIG. 171

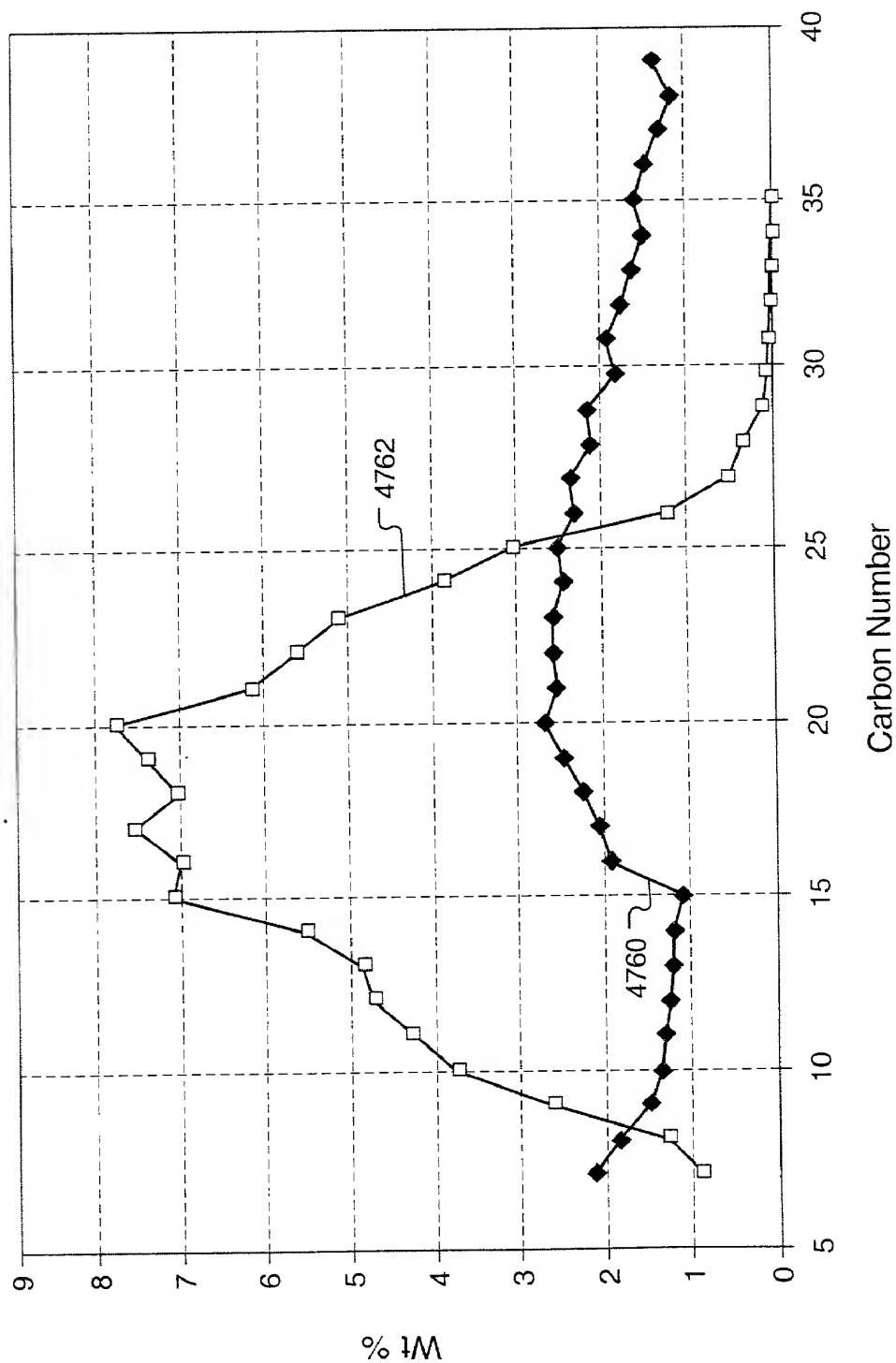


FIG. 172

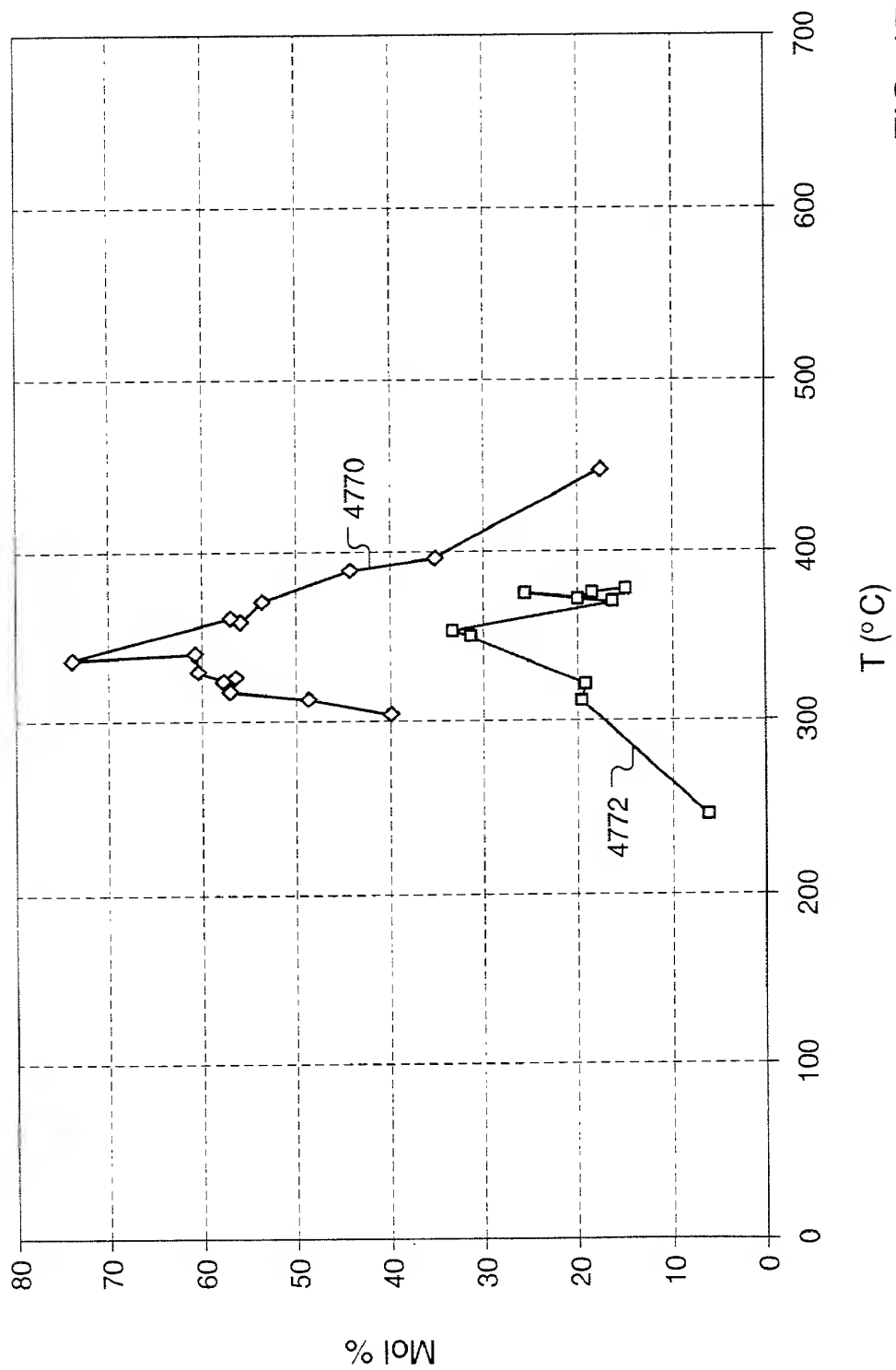


FIG. 173

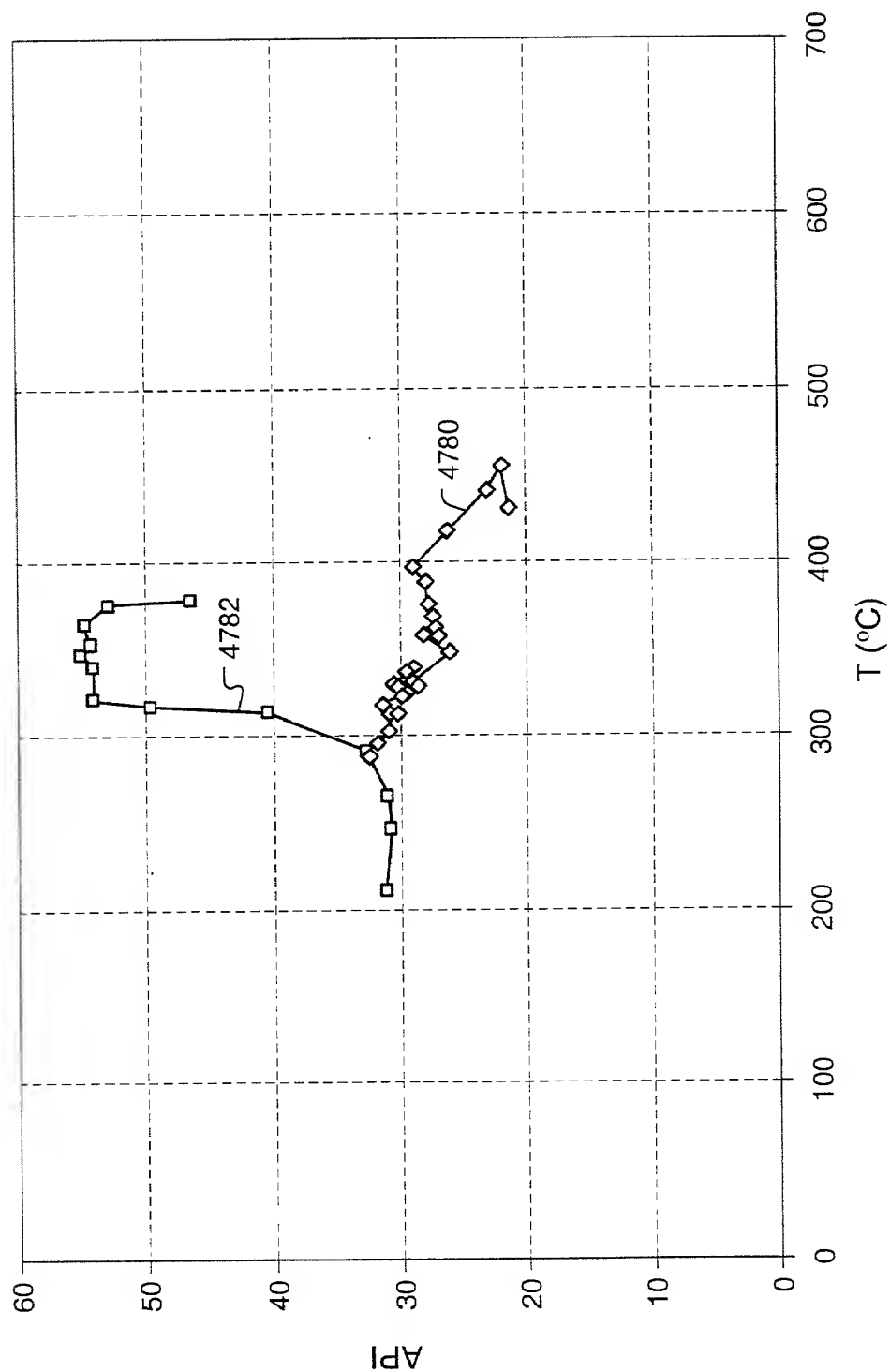
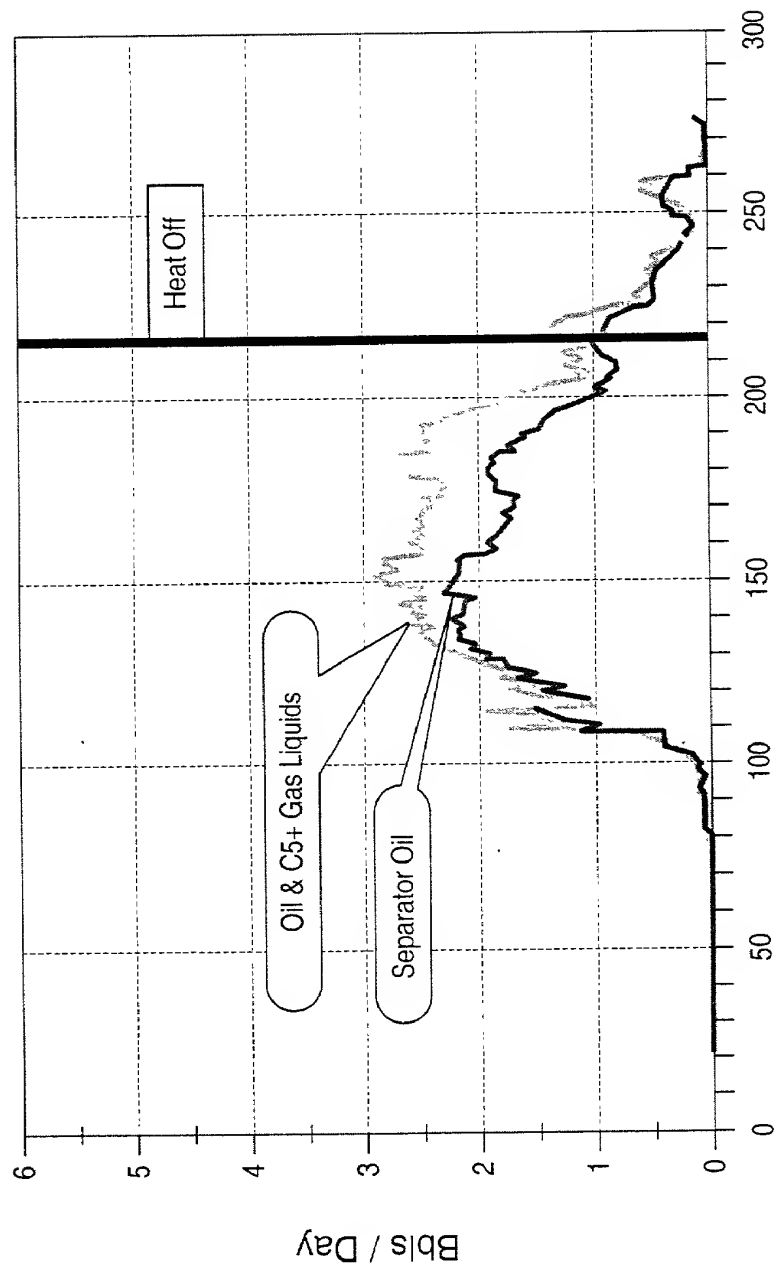


FIG. 174



Days From Start of Heat Injection

FIG. 175

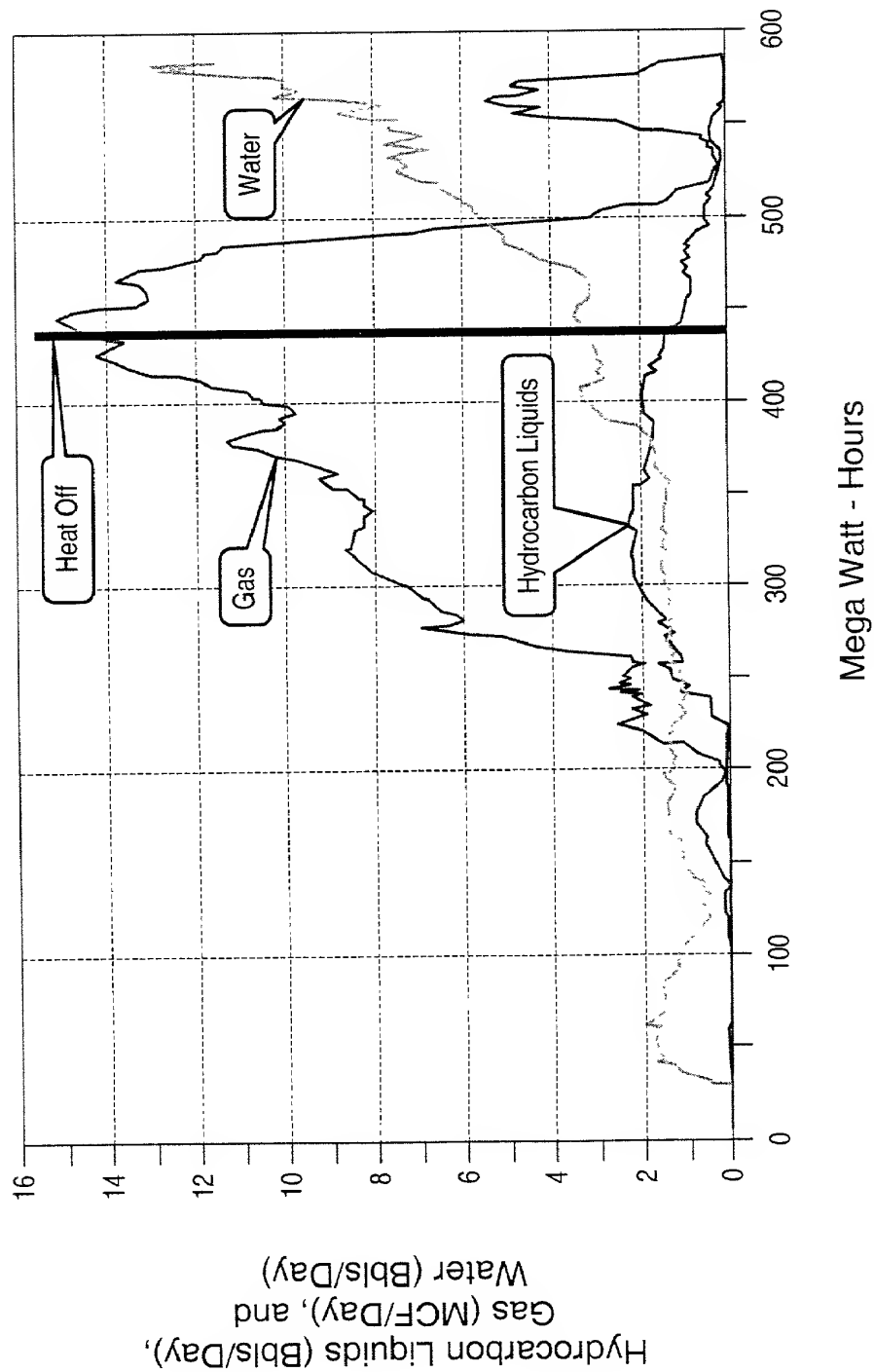


FIG. 176

172.37 137.90 103.42 68.95 34.47 0

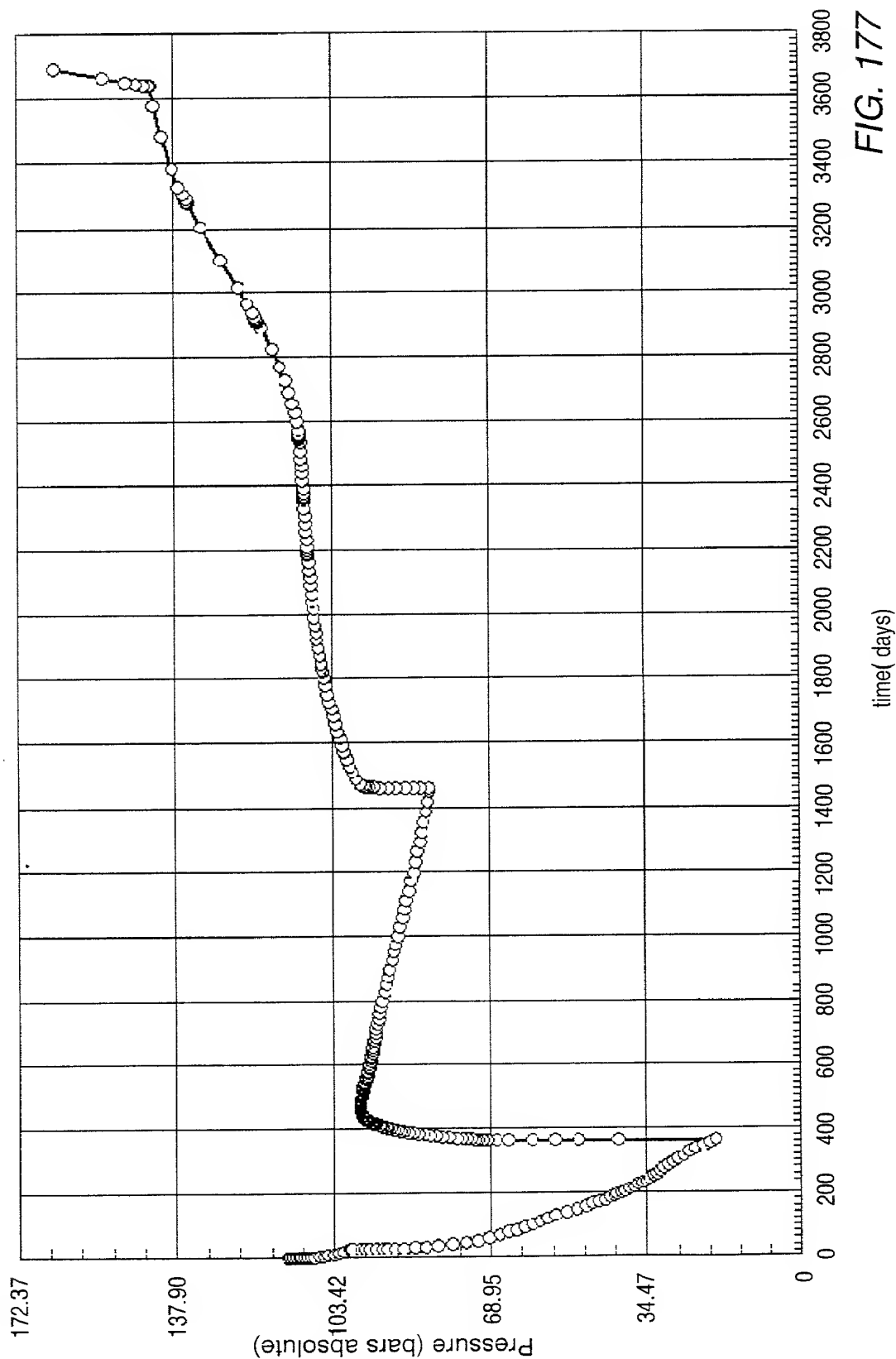


FIG. 177

11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11
 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11
 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11 11-11-11

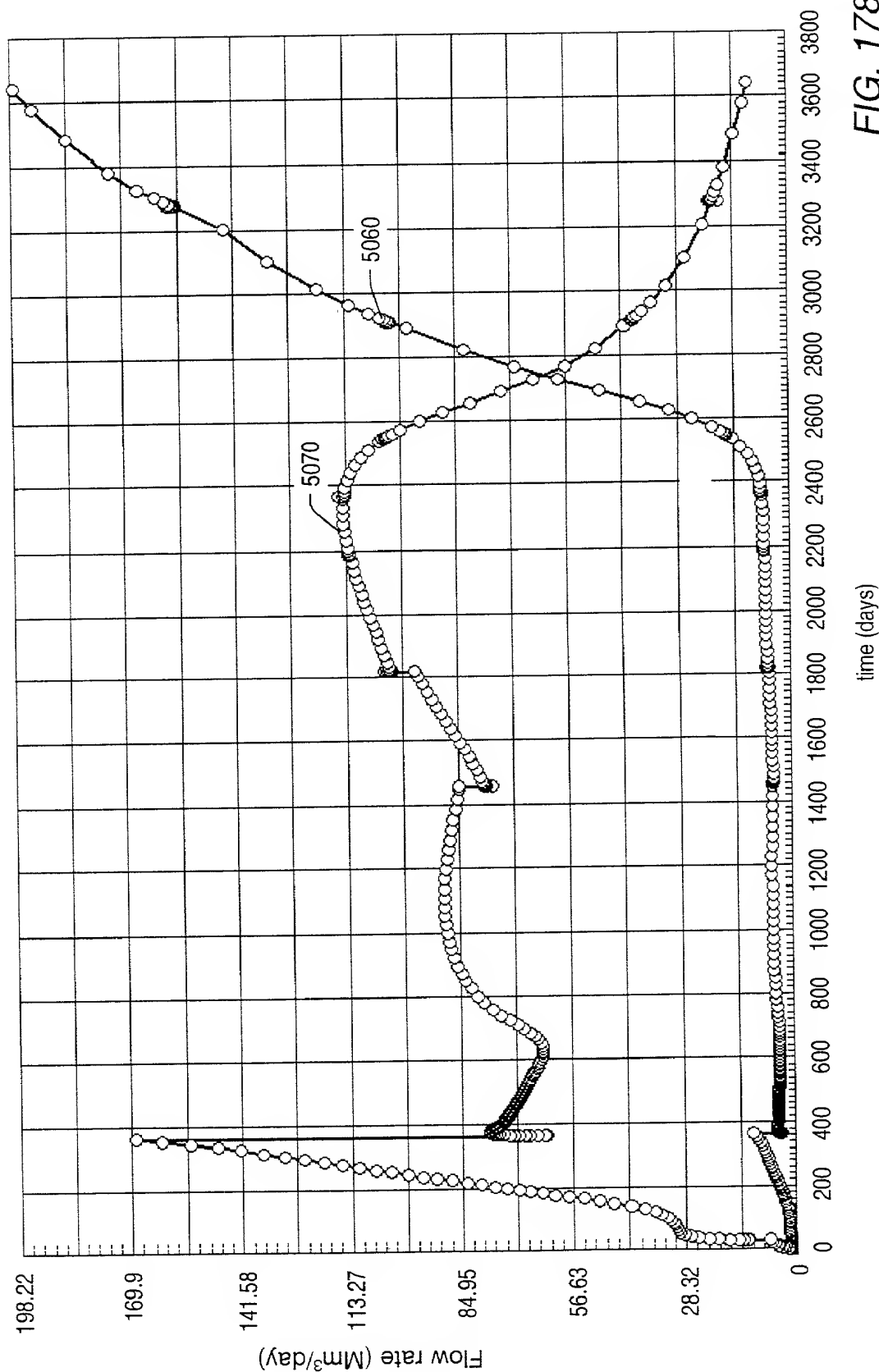
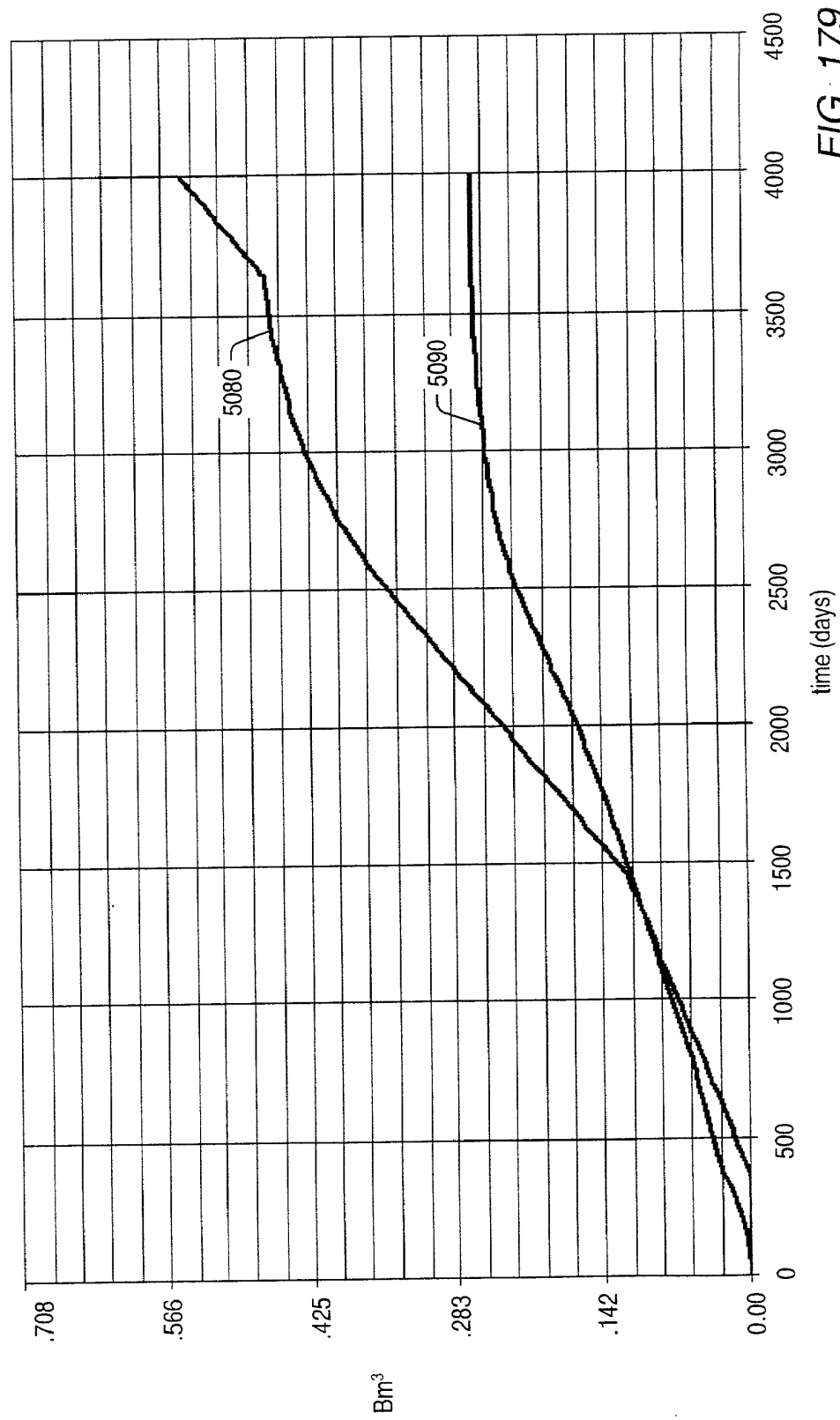


FIG. 178



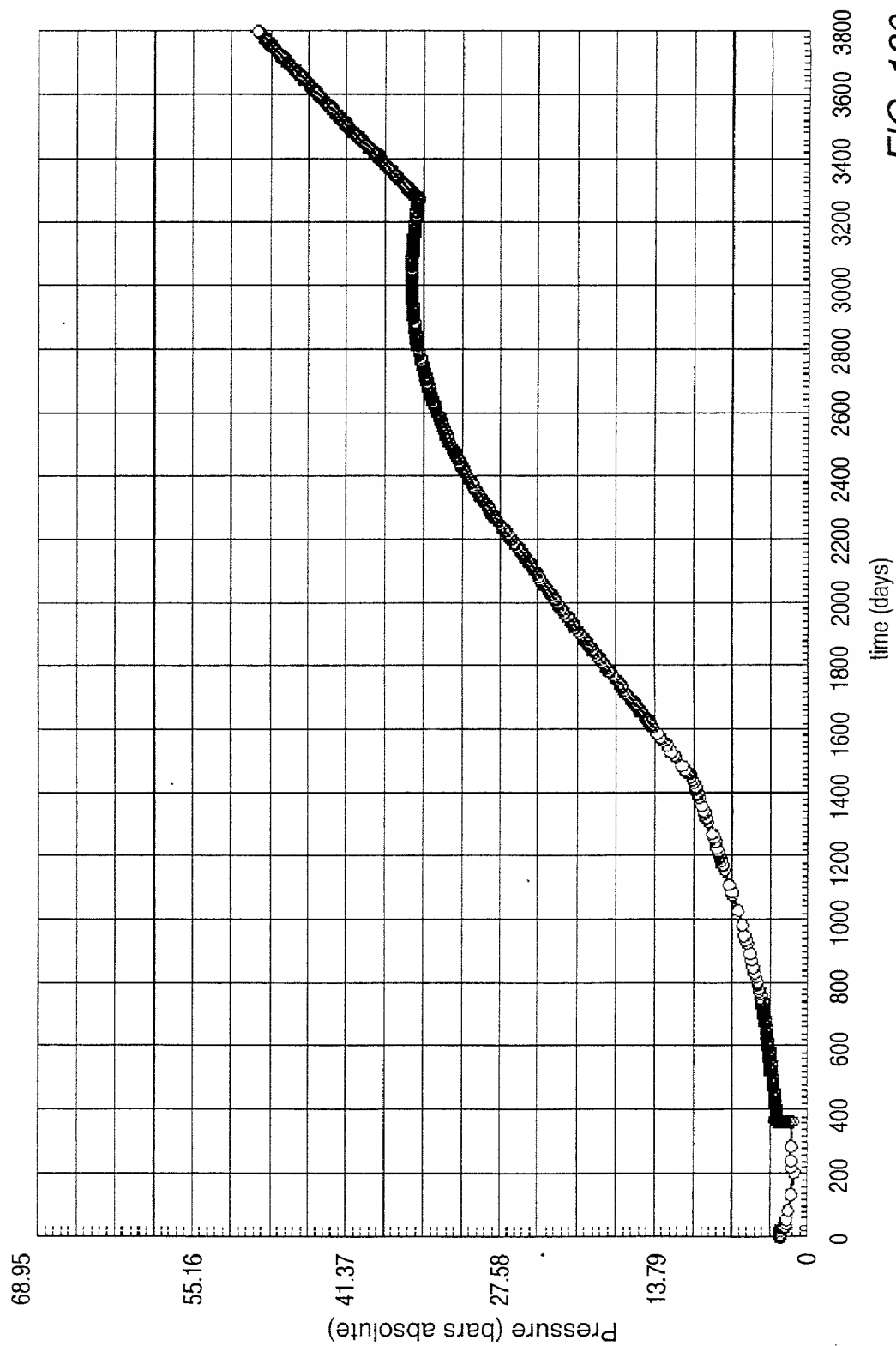


FIG. 180

